CANADA

NATIONAL ENERGY BOARD
REASONS FOR DECISION

In the Matter of the Application Under
The National Energy Board Act

of

The Manitoba Hydro-Electric Board

February 1985

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Cat. No. NE22-1/1985-9E
ISBN 0-662-13816-3

This report is published separately in both official languages.

Ce rapport est publié séparément dans les deux langues officielles.

Copies are available on request from:

Secretariat
National Energy Board
473 Albert Street
Ottawa, Canada
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Exemplaires disponibles auprès du:

Secrétariat
Office national de l'énergie
473, rue Albert
Ottawa (Canada)
K1A 0E5
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Printed in Canada

Imprimé au Canada

NATIONAL ENERGY BOARD

IN THE MATTER OF the National Energy Board Act and the Regulations made thereunder; and

IN THE MATTER OF an application made by the Manitoba Hydro-Electric Board (hereinafter called "Manitoba Hydro" or "the Applicant") for an Export Licence under Part VI of the said Act, and filed with the Board under File No. 1923-4/M7-7.

HEARD in Winnipeg, Manitoba on: 5, 6, 7, 8, 9, 10, 12, 13, 14, 15, 16 November 1984

BEFORE

R.F. Brooks	Presiding Member
J.L. Trudel	Member
R.B. Horner, Q.C.	Member

APPEARANCES

I.A. Blue W.J. Burnett	Manitoba Hydro-Electric Board
W.M. Smith	Alberta Petroleum Marketing Commission
D. Austin	British Columbia Hydro and Power Authority
P. Barsalou C. Henderson G. Bloodworth	Minister of Indian Affairs and Northern Development
J.M. Johnson N. Markettos	Minister of Energy for Ontario
R.H. Crown D. Goulding	Ontario Hydro
G. Armstrong	Saskatchewan Power Corporation
A. Peltz	Consumers Association of Canada, Manitoba
J.W. Wilson	Grand Rapids Special Forebay Committee Inc.
M. Wiebe	Inter Church Task Force on Northern Flooding
C. Gillespie G. Sigurdson	Northern Flood Committee Inc.
D. Rosenbloom	Manitoba Keewatinowi Okimakanak Inc.
G. Filmon	Progressive Conservative Party of Manitoba
D.W. Craik	Himself
B. Silver A. Lansdowne	Manitoba Environmental Council
K. Emberley Dr. W.R. Goddard	The Crossroads Resource Group of Winnipeg
S.K. Fraser	National Energy Board

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Abbreviations Used in the Report

For Units of Measurement

$	dollars (expressed in Canadian funds discounted to 1984 unless otherwise stated)
GW.h	gigawatt hour (1 million kW.h)
km	kilometre
kV	kilovolt
kW.h	kilowatt hour
MW	megawatt
MW.h	megawatt hour
mill	one tenth of a cent (expressed in Canadian funds unless otherwise stated)

For names and expressions

"ADJ"	Adjustment factor
"Agreement"	The Power Agreement between Northern States Power Company, Manitoba Hydro-Electric Board and Manitoba Energy Authority
"CAC"	Consumers Association of Canada, Manitoba
"CI"	Capital Investment
"Board" or "NEB"	National Energy Board
"NEB Act" or "Act"	National Energy Board Act
"IPB"	Inter-Departmental Planning Board
"LARR"	Levelized Annual Revenue Requirement
"MEA"	Manitoba Energy Authority
"Applicant" or "MH"	Manitoba Hydro-Electric Board
"Manitoba"	Manitoba Hydro-Electric Board and Manitoba Energy Authority
"MEARA"	Manitoba Environmental Assessment and Review Agency
"NSP"	Northern States Power Company
"MKO"	Manitoba Keewatinowi Okimakanak Inc.
"OH"	Ontario Hydro
"SPC"	Saskatchewan Power Corporation
"SDR"	Social Discount Rate
"SOCL"	Social Opportunity Cost of Labour

Executive Summary

Note: This summary is provided solely for the convenience of the reader and does not constitute part of these decisions or the reasons for them.

The Application

In August 1984, the Manitoba Hydro-Electric Board (MH) applied to the National Energy Board (the Board) for a licence to export electric power and energy to Northern States Power Company (NSP), a United States electric utility supplying the area centred on Minneapolis, Minnesota. The licence requested was for 500 MW of firm power and 4392 GW.h of firm energy (equivalent to 500 MW at a capacity factor of 100%), in each 12-month period from 1 May 1993 to 30 April 2005. The sale would be in accordance with an agreement dated 14 June 1984 between NSP, MH and the Manitoba Energy Authority, the latter a recently formed provincial crown corporation authorized to negotiate purchases and sales of electric energy.

A hearing on MH's application took place in Winnipeg, Manitoba in November, 1984.

The Board's Finding

In its Decision the Board found that the power and energy to be exported were surplus to reasonably foreseeable Canadian requirements, and that the prices to be charged were just and reasonable in relation to the public interest. The Board stated that, having had regard to all other considerations that appeared to it to be relevant, it was prepared to issue a licence authorizing the export to NSP of firm power of up to 500 MW and firm energy of up to 3405 GW.h per consecutive 12-month period from 1 May 1993 to 30 April 2005.

Background

The export price would comprise separate charges for capacity and energy. The capacity charge would be based on NSP's avoided cost, specifically NSP's share of the actual capital cost of a new coal-fired generating unit in Minnesota from which NSP is scheduled to receive power beginning in 1988; the capital cost would be escalated to 1993, the date of commencement of the export. The capacity charge would be adjusted to account for the shorter duration of the proposed export compared to the expected life of the coal-fired unit. The energy charge would also be based on NSP's avoided cost, specifically its share of all fixed and variable operating costs of the same coal-fired unit, these costs being used to derive the unit price of the energy exported. All charges would include provision for escalation.

Manitoba Hydro proposes to advance the in-service dates of three hydro-electric stations on the lower Nelson River in order to have sufficient capacity to meet the proposed export requirements along with its domestic load. The cost to MH of the export would be that associated with advancing the in-service dates of the three stations, plus the operating costs associated with producing the energy for export. An MH analysis indicates that revenues from the export sale would exceed costs by about $400 million expressed in present value 1984 dollars. MH also carried out a social cost-benefit analysis to estimate the benefits and costs applicable to Canada as a whole in comparison with the commercial benefits accruing to MH. The resulting estimate of benefits to Canada is of the order of $163 million in present value terms.

The expected environmental impact of the export would be minor, being related largely to the timing of construction of generating facilities; the stations would be required whether or not the export occurs. Any operational effects resulting from the export would be small and possibly beneficial.

Major Issues

Some of the major issues raised by intervenors, and the Board's views on them, are summarized below:

1. The Saskatchewan Power Corporation requested that the energy associated with the firm power be limited to a 75% annual capacity factor, or alternatively, that any quantity of energy above the base amount associated with the firm power at a capacity factor greater than 75% be authorized as interruptible. The

Board's view is that MH did not adequately justify its need for a licence to export power at up to a 100% capacity factor. The Board decided that a licence permitting a maximum annual energy limit of 3405 GW.h, corresponding to an annual capacity factor of 78%, would provide sufficient flexibility for MH to meet its contractual commitments and at the same time would not prejudice other Canadian utilities.

2. A number of the intervenors were concerned about the effect of the hydro-electric construction projects on Indian bands. Two groups, who represent most of the Indian bands of northern Manitoba, requested that the Board condition the licence to ensure that Indian communities would benefit from the construction projects, particularly with regard to employment and business opportunities. While the Board recognizes and is sympathetic to the concerns of the native groups, it did not consider it appropriate to impose the requested terms and conditions in the export licence. In the Board's view, given the limited nature of the export application, there are other more appropriate forums for resolution of the native groups' concerns.

3. The Consumers Association of Canada, Manitoba (CAC) took the position that MH had not sufficiently explored other methods of supplying future domestic plus export requirements. This position was shared by other intervenors. In the circumstances of this case, the Board was of the view that it was not called upon to decide whether the Applicant had selected the best option to supply its future requirements. The Board noted, however, that its assessment of the export licence application had not revealed anything wrong with the MH generation expansion plan.

4. One of the intervenors suggested that the appropriate costs to be assessed against the export might be a share of the total costs of the construction of the three planned hydro-electric stations and all the preceding developments associated with the Lake Winnipeg Regulation and Lower Nelson Diversion Projects. In the Board's view, since the only change in MH's generation expansion plans required to make the export is the advancement of the construction of these three stations, the costs associated with their advancement are the appropriate costs to be assessed against the export.

5. Several intervenors expressed concern that the economic and financial risk associated with the export sale had not been adequately assessed. The Board recognizes that some level of risk is always present in any major undertaking, and it is satisfied that there was sufficient evidence to show that the risks associated with the proposed export were adequately examined by the Applicant and found to be within acceptable bounds.

6. Two of the intervenors expressed concern that because the purchase agreement provided that the Manitoba Energy Authority was to collect the export revenues, there was no guarantee that the export revenues would be used to recover MH's advancement costs. The Board notes that it is not so much concerned with how export revenues are allocated to recover their applicable costs in Canada but rather with the question of whether these revenues would indeed provide benefits to Canada. In this case the Board was satisfied that the revenues from this export would accrue to the benefit of not only Manitoba but also Canada as a whole.

Part I — Preliminary Motions

Introduction

On 11 September 1984, the Board issued Order No. EH-6-84 setting down for public hearing commencing 5 November 1984, the 1 August 1984 application of MH under Part VI of the National Energy Board Act (the NEB Act) for a licence authorizing the export of power and energy to NSP.

Decisions on Preliminary Motions

At the opening of the hearing, the Board was advised that parties had a number of preliminary motions which they wished to raise. The Board heard argument on these motions on 5 and 6 November 1984.

The Board granted, in part, applications from the Northern Flood Committee (NFC), the CAC and the Minister of Indian Affairs and Northern Development for additional information to be provided by MH. The Board's ruling on these motions is set out at pages 284 to 305 of the transcript of the proceedings.

The Board dismissed two motions or preliminary objections raised by the Manitoba Keewatinowi Okimakanak Inc. (MKO). In summary, MKO argued that the Manitoba Energy Authority (MEA) which, with MH, was signatory to the agreement with NSP, did not have the legal authority to enter into such an agreement. MKO argued, therefore, that the contract before the Board was invalid and that the proceedings should not continue. In the alternative, MKO argued that if the MEA did have the power to become a signatory to the agreement in question, MEA should be before the Board as an applicant in the proceedings. The Board's decision on these two preliminary motions is shown in Appendix 9 of these Reasons for Decision.

Part II — Application
Chapter 1
Background

The Applicant, MH, is a Crown Corporation established in 1949 by the provincial legislature. It has broad powers to provide electric power throughout the province and operates under the Manitoba Hydro Act, being Chapter 190 of the Revised Statutes of Manitoba.

The MEA is a Crown Corporation established in 1980 by the provincial legislature under the Manitoba Energy Administration Act, being Chapter 80 of the Revised Statutes of Manitoba. MEA has the authority to negotiate on behalf of the Province of Manitoba for the purchase and sale of electric energy. MH requires the approval of MEA before it can export.

MH is the fifth largest generating utility in Canada. It distributes electricity to consumers throughout the province except for the central portion of Winnipeg which is served by the city-owned Winnipeg Hydro. MH and Winnipeg Hydro operate as an integrated electrical generation and transmission system. MH is a liaison member in the Mid-Continent Area Power Pool. A map illustrating the major facilities of the integrated system as of 1984 is shown in Appendix 1.

The integrated system generation is composed of hydraulic generation with a winter capacity of 3644 MW, coal-fired thermal generation with an operating capacity of 369 MW, and 27 MW of diesel and gas generation. The isolated diesel generation totals 24 MW. MH also has an agreement to purchase 300 MW of winter peaking capacity from NSP until 30 April 1993. Under adverse water conditions MH also has the right to purchase up to 1500 GW.h from NSP and up to 500 GW.h from the Minnesota Power and Light Company in any year. The integrated system firm peak demand for 1983/84 was 2889 MW with a firm domestic energy demand of 14 388 GW.h.

MH operates alternating current transmission lines at voltages of 138 kV, 230 kV and 500 kV, as well as a major north-south high voltage direct current (HVDC) tie at ± 500 kV linking the Nelson River stations to the load centres at Winnipeg. The Applicant has three 230 kV interconnections with Saskatchewan Power Corporation (SPC) as well as two 230 kV and one 115 kV interconnection with Ontario Hydro (OH). MH also operates two 230 kV, one 500 kV and two lower voltage interconnections with United States utilities, viz. NSP, Minnkota Power Cooperative, Otter Tail Power Company and Minnesota Power and Light Company.

Chapter 2
Licences Held by Manitoba Hydro

MH currently holds seven export licences designated EL-97 to EL-103; these terminate on 31 October 1992 with the exception of EL-99 which extends to 30 April 1993. Two of these are interruptible licences: EL-97 with an energy limit of 19,500 GW.h over the 13-year term of the licence, and EL-103 with an energy limit in any consecutive 12-month period of 12,000 GW.h less any amounts exported under all other licences during that period.

Four of the MH licences are for firm power exports. Summer peaking capacity is exported under licence EL-98 with a capacity limit of 200 MW and an energy limit of 876 GW.h per year. Seasonal diversity capacity is exported under licence EL-99 with a capacity limit of 300 MW and an energy limit of 262.8 GW.h per year. EL-102 is a short-term firm licence with a capacity limit of the lesser of 800 MW or the surplus capacity of the licencee's system, and an energy limit, in any operating year, of the lesser of 5000 GW.h or the sum of 65% of the energy surplus plus any energy imported as a return of energy exported. Storage transfers are allowable under Firm licence EL-101 which has an energy limit of 2500 GW.h in any consecutive 12-month period.

MH also holds carrier transfer Licence EL-100 with an energy limit of 800 GW.h in any consecutive 12-month period. This licence authorizes MH to transfer power or energy wheeled from one utility for delivery to a third party or to the originating utility.

Chapter 3
The Application

By application dated 1 August 1984, MH requested a firm export licence to sell to NSP a maximum of 500 MW of firm power with a maximum of 4392 GW.h of energy, (equivalent to 500 MW at 100% capacity factor) in each 12-month period from 1 May 1993 to 30 April 2005 in accordance with the 14 June 1984 Power Agreement between NSP and MH and MEA (hereafter MH and MEA are jointly referred to as "Manitoba" and the Power Agreement is referred to as the "Agreement"). MH also sought approval of the Agreement.

The Agreement calls for Manitoba to export 500 MW of power at 75% capacity factor, equivalent to 3285 GW.h of energy per year, on a take-or-pay basis. Under MH's load growth projections, this obligation requires the advancement of the in-service dates of the next three generating stations. The export would take place over existing international power lines. The supply of this export load would be given priority over the supply by MH of all other loads except for MH's firm Manitoba load subject to certain limitations as defined in the Agreement.

Chapter 4
The Power Agreement

The Agreement between NSP and Manitoba was signed on 14 June 1984 but is subject to obtaining the necessary approvals of the NEB and any regulatory body having jurisdiction with respect to NSP. Its term would run until 30 April 2005.

The Agreement states that Manitoba shall sell and NSP shall purchase 500 MW of firm power for the 12-year period from 1 May 1993 to 30 April 2005. Subject to the limits outlined below, the power is to be available to NSP on at least a 75% annual capacity factor, equivalent to 3285 gigawatt hours on an annual basis.[1] The parties may mutually agree on a different schedule in any given year. Manitoba has the right to limit the capacity factor to a maximum of 80% in each summer month, May through October, and 75% in each winter month, November through April. Deliveries may be reduced due to unavailability of transmission line capacity or generating units at Limestone or due to a lack of sufficient capacity on the MH system to meet its firm domestic requirements. The minimum hourly delivery scheduled at any time during the term of the Agreement is to be 150 MW or as otherwise agreed between the parties.

The price of the capacity and energy purchased by NSP from Manitoba is based on 80% of the cost to NSP of the capacity and the energy received from the Sherburne County unit 3 (Sherco 3) coal-fired generating plant, the capacity cost being escalated to a May 1993 value; the capacity charge is adjusted to reflect the fact that the contract term is shorter than the expected life of the Sherco 3 plant. The Agreement contains provisions for payment of a penalty by NSP should that utility not take the scheduled annual amount of energy, and of a penalty by Manitoba should Manitoba not deliver the scheduled amount in any Contract Year. A Contract Year runs from 1 May to the following 30 April. Appendix 2 outlines the details of pricing components and penalty provisions under the Agreement.

The Agreement contains a provision that, in the event of adverse water conditions in Manitoba's watershed, NSP shall sell to Manitoba a maximum of 1500 GW.h of energy in any 12-month period. Manitoba is to pay an amount equal to NSP's cost of providing such energy, plus the greater of the average percent mark-up NSP received from energy sales to United States utilities during the previous 12-month period or 10 % of NSP's cost of providing such energy.

All payments between the parties to the Agreement are to be in United States dollars.

[1] 3294 GW.h in a leap year.

Chapter 5
Evidence

5.1 The Manitoba Load

In the fiscal year 1 April 1983 to 31 March 1984, the Manitoba annual peak demand was 2889 MW and the annual energy load was 14 387 GW.h. According to the MH Annual Report, for the year ending 31 March 1984 the Applicant served 333 585 customers. These included 293 620 residential and farm customers and 39 965 power and general service[1] customers.

5.2 Load Forecast

MH prepares a load forecast once a year as the initial input into its annual planning cycle. To forecast the residential market MH applies econometric modelling and modifies this to incorporate current municipal planning. For the farm market, MH extrapolates the recent trend and modifies it to account for known developments. For the commercial and industrial markets, MH extrapolates growth by industry type based on historical reaction to economic conditions and anticipated customer activities.

MH based its application on its May 1983 load forecast[2]. Table 5-1 shows some of the peak demands, projected growth rates, and annual energy requirements:

Table 5-1

**May 1983 Load Forecast:
Peak Demand, Annual Growth Rates and Energy Requirement**

	1983-84	1993-94	2004-05
Peak Demand (MW)	2 889	3 946	5 138
Average annual growth rate from 1983-84:		3.2%	2.8%
Annual Energy Requirement (GW.h)	14 387	18 999	24 697
Average annual growth rate from 1983-84:		2.8%	2.6%

[1] General service includes both commercial and small industrial.

[2] This forecast is commonly referred to by the Applicant as its 3.1% load growth forecast. The figure of 3.1% is the weather-adjusted average annual growth rate from 1982/83 to 1992/93. The forecast also includes both a Low Load Growth Scenario of 2.0% and a High Load Growth Scenario of 4.0%.

In response to an information request, the preliminary June 1984 load forecast was filed by MH. A witness stated that this forecast was not available at the time the application was prepared but any changes in the forecast load growth were within the range of the sensitivity tests which are included in the application. This forecast predicted slightly lower growth rates in the long term compared with the May 1983 load forecast.

5.3 Generation Capacity and Additions

As of January 1984, MH's dependable annual energy capability was 20 875 GW.h and its total installed generating capacity including stations owned by Winnipeg Hydro was 4064 MW, consisting of 3644 MW of hydraulic generation and 420 MW of thermal generation. These resources are summarized in Appendix 3.

In addition to these indigenous resources, MH has interconnections with utilities in Saskatchewan, Ontario, and the United States. These ties enable MH to make power transfers which contribute to the economy and reliability of its system. The evidence indicated that the total intertie capability was approximately 1375 MW.

MH presently participates in a 300 MW summer/winter diversity exchange with NSP which provides each system with additional capacity for meeting peak demands. MH does not intend to continue this exchange after the export licence expires in 1993. However, testimony at the hearing indicated that it is MH's intention to negotiate another diversity exchange similar in type to this existing arrangement with NSP. According to a witness it would be more beneficial for MH to conduct such a diversity exchange with utilities in Nebraska than with NSP.

MH submitted to the Board a schedule of planned capacity additions required to meet the domestic load and to permit the firm export to NSP. This expansion plan, which is based on the May 1983 load growth forecast, provides for the installation of three new hydro-electric stations to meet domestic loads and indicates that the in-service dates of these stations would have to be advanced in order to meet the additional NSP firm export load. This advancement is summarized in Table 5-2:

Table 5-2

Advanced In-Service Dates of Stations

Station Name	Station Capacity	In-Service Date (No export)	In-Service Date (NSP export)
Limestone	1280 MW	1992-1994	1990-1992*
Wuskwatim	350 MW	1999-2000	1995-1996
Conawapa	1300 MW	2002-2004	1998-2000

* Limestone advancement includes one year extra (from 1991 to 1990) to allow MH to make additional interruptible sales under existing export Licences.

5.4 Load, Supply and Surplus Power and Energy

Appendix 4 shows, for each year of the requested licence period, MH's estimates of power capacity, domestic and firm export demand, and the resulting surplus power. Appendix 5 shows, for each year of the requested licence period, MH's estimates of annual dependable energy capability, domestic and firm export load and the resulting surplus energy. The power capacity and energy capability figures are based on the generation expansion plan which includes advancement of the in-service dates of the Limestone, Wuskwatim and Conawapa stations to meet the NSP firm export load. The domestic power demand and energy load are based on the May 1983 load forecast.

The monthly statements given in the application and used to prepare Appendix 4 indicate that the annual peak demand would most likely occur in January and the minimum power demand would most likely occur in August. For the month of January, the critical year of the proposed period is 1995/96 where the surplus capacity, after supplying the domestic load, is projected to be 599 MW. An analysis of the data in Appendix 5 indicates that the minimum dependable annual surplus energy after supplying the domestic load also occurs in 1995/96 and is projected to be 5955 GW.h.

5.5 The Export Market

Northern States Power Company and its subsidiaries are collectively known as NSP. NSP is a part of the Mid-Continent Area Power Pool and serves customers in the states of North Dakota, Minnesota, Montana, South Dakota, Iowa, and Michigan. The Mid-Continent Area Power Pool provides for an overview of the planning and operating activities in the region with respect to reliability. Operationally it functions as a power pool for its member utilities.

NSP generates, transmits and distributes electric power to nearly 1.2 million customers centred on Minneapolis, Minnesota. In 1983 NSP's total installed capacity was 6071 MW at the time of the annual peak, which was 5389 MW and occurred in July. Firm system purchases of capacity totalling 500 MW from MH contributed 9.3% to the load meeting capability at the time of the annual peak. During that year, in addition to its own generation, NSP obtained approximately 5800 GW.h or 19% of its energy requirements from MH.

NSP is interconnected with MH by one 230 kV line and one 500 kV line with a total transfer capacity of about 1175 MW. In the United States these lines have joint ownership, with NSP owning about 1090 MW of capacity.

To meet forecast increases in demand, NSP is participating in the construction of the 800 MW Sherco 3 coal-fired unit to be located in Sherburne County, Minnesota (NSP's share is 472 MW). This plant is due to be placed in service at the beginning of 1988. Following that, additional load growth would be satisfied by adding additional coal-fired capacity.

NSP has stated that the intent of the new purchase from MH is to permit the deferral of a coal-fired addition which would otherwise be needed in 1993 to meet NSP's projected peak demand plus reserve requirements. This new purchase would replace the current 200 MW summer capacity purchase and 300 MW diversity exchange which expire in 1993 and would also provide 500 MW of additional capacity in the winter. The plant that NSP would defer is a 500 MW lignite- burning unit in North Dakota.

5.6 Offers to Canadian Utilities

On 27 July 1983, the Applicant sent identical letters of offer to OH and SPC, enclosing a copy of the Power Agreement between NSP and Manitoba dated 14 June 1984 as well as pricing information on the expected costs of NSP's alternative source of energy.

By letter dated 1 November 1984, in response to MH's offer of the firm power and energy proposed for export, OH stated that "the purchase is not economic to OH". In a letter dated 31 October 1984, SPC stated, among other things, that it "would not require any portion of the firm power and firm energy" to be sold to NSP provided it would be assured by MH that MH would be able to supply a firm commitment of up to 300 MW to SPC during a time frame similar to that of the proposed export. In a letter dated 8 November 1984, MH provided this assurance to SPC.

5.7 Prices and Costs

5.7.1 Export Price

The prices to be charged by Manitoba for delivery of capacity and energy pursuant to the Power Agreement with NSP are determined by capacity and energy pricing formulae. The general basis for pricing is the cost to NSP of capacity and energy from its share of the Sherco 3 generating unit scheduled to be completed in 1988.

Capacity Pricing

Manitoba is to bill NSP monthly beginning 31 May 1993 for the 500 MW capacity purchase as follows:

Monthly Capacity Bill($)[1] = 1/12 × 0.8 × 500 000 × CI × LARR × ADJ

Where: CI is the Capital Investment in Sherco 3, escalated to 1 May 1993, expressed in $/KW;
LARR is the Levelized Annual Revenue Requirement; and
ADJ is an adjustment factor which reflects the fact that the contract term is shorter than the expected life of Sherco 3;
all as defined in the Power Agreement.

According to a witness the adjustment factor ADJ is to compensate NSP for the effect of inflation on the cost of a new thermal plant installed in 2004 instead of 1993.

Energy Pricing

Manitoba is to bill NSP monthly beginning 31 May 1993 for the energy purchased as follows:

Monthly Energy Bill ($)[2] = 0.8 X (fixed operating costs of Sherco 3 + variable operating costs of Sherco 3);

Where: the fixed and variable operating costs are as defined in Schedule 2 of the Power Agreement.

Estimated Prices

According to estimates in the application, the average annual combined price for capacity and energy will increase from 67 mills per kW.h in 1993 to 98 mills per kW.h in 2004–05[3]. These estimates are based on an annual delivery of 3285 GW.h in each year of the 12-year term. According to the evidence, the price for any deliveries of energy in excess of 75% capacity factor would be equivalent to 80% of the variable operating costs of Sherco 3. A witness stated that in 1993 the energy price would be equivalent to 80% of the cost of fuel. The cost of fuel in 1993 was estimated to be $27.85 per MW.h (United States 1993 $).

[1] Refer to Appendix 2 for a detailed description of the components of the capacity pricing formula.
[2] Refer to Appendix 2 for a detailed description of the components of the energy pricing formula.
[3] Prices are in current Canadian $.

5.7.2 Applicable Cost in Canada

According to the Applicant's cost-recovery analysis, the costs associated with the export would be the costs of advancing the Limestone, Wuskwatim and Conawapa stations, plus the operating costs associated with producing the energy for export. These costs are estimated by the Applicant to be $305 million.

The Applicant's cost-benefit analysis describes the social costs and benefits of the project. This cost-benefit analysis is described in some detail in the Economic Analysis section of this Chapter.

5.7.3 Price of Equivalent Service to Canadians

The responses of both Ontario Hydro and Saskatchewan Power Corporation to MH's offers of the power and energy proposed for export indicated that neither utility was interested in the firm power and energy offered at the proposed export price[4]. The evidence showed that the proposed export price of from 67 to 98 mills per kW.h over the life of the contract would far exceed MH's domestic rates for large industrial customers of approximately 20 mills per kW.h in 1984 and 34 mills per kW.h estimated for 1993[5]. Counsel for MH stated that an industrial customer is a customer that would take power at "something similar but not at this particular service...".

5.7.4 Alternative Cost in United States

The evidence showed that NSP's least cost alternative is a lignite coal-fired plant in North Dakota which would have costs equivalent to 94% of the Sherco 3 costs in 1993 and 86% in 2004.

5.8 Economic Analysis

The economic analysis of the proposed firm export sale to NSP submitted by MH included both a cost-recovery analysis and a cost-benefit analysis. Both types of analyses attempted to measure the incremental impact of making the export. In the case of the cost-recovery analysis, this involved estimating the difference between total system cost and revenue streams with and without the export sale. Similarly, the cost-benefit analysis attempted to quantify the difference in net benefits to Canada with and without the sale.

Although according to MH the firm export sale could be made with only a one-year advancement of the Limestone station, the Applicant plans a two-year advancement because it believes the extra year of advancement would allow the profitable

[4] Refer to the section titled *Offers to Canadian Utilities* for a description of these offers and responses.
[5] Prices are in current Canadian $.

sale of additional interruptible energy. This two-year advancement sequence is referred to as the Sale Sequence while the one-year advancement sequence, required to make the firm sale only, is referred to as the 500 MW Only Sequence.

Full cost-recovery and cost-benefit analyses were presented for the Sale Sequence. An analysis showing the profitability to MH of the extra year of advancement required to make additional interruptible sales was also submitted. A corresponding cost-benefit analysis of the 500 MW Only Sequence was not provided.

5.8.1 Cost-Recovery Analysis Sale Sequence: Two-Year Advancement of Limestone

The costs to MH used in the cost-recovery analysis were derived by taking the difference between the total costs associated with the Sale Sequence and the total costs associated with MH's planned system expansion sequence with no advancement. The Sale Sequence was based on an advancement of the Limestone station from 1992 to 1990, an advancement of the Wuskwatim station from 1999 to 1995, and an advancement of the Conawapa station from 2002 to 1998. A computer model for screening expansion scenarios was utilized to determine the additional costs associated with making the exports.

The primary costs of making the proposed exports would be the capital costs associated with the advancement of the in-service dates of the three stations. Additional operating and maintenance costs would also be incurred as a result of the exports. MH also included as a cost of the firm export the lost net revenue resulting from the reduced amount of energy available for interruptible sales in later years under the Sale Sequence compared to the no-export case, i.e. the case in which no advancements occur and no firm or additional interruptible exports are made.

The revenues associated with the Sale Sequence would be derived from the firm sale over the 1993-2005 licence term, and the additional interruptible sales over the period 1990-1993 that would be made possible by the two-year advancement of Limestone. To determine the revenues from the firm export, the Sherco 3 costs were adjusted to account for the difference between the Sherco 3 in-service date and the start of the export sale, the shorter contract term compared to the expected life of Sherco 3, and the escalation of fuel costs at the same rate as at the mine from which coal for Sherco 3 would be obtained.

MH's base case cost-recovery analysis of the Sale Sequence was based on the following major assumptions:

- an average annual load growth rate in Manitoba of 3.1 percent over the period 1984-2005;
- an escalation rate of 5 percent to 1985, 6 percent in 1986, and 7 percent thereafter; and
- a nominal cost of capital of 12 percent to 1985, and 11 percent thereafter.

Table 5-3 summarizes the cost-recovery analysis of the Sale Sequence submitted by MH.

Table 5-3

Sale Sequence: Cost-Recovery Analysis Submitted by MH (present value, millions of 1984 $)

Year	Accumulated Costs	Accumulated Revenues	Accumulated Profits**	Revenue/Cost Ratio
1985	3	—	(3)	—
1990	345	—	(345)	—
1995	606	237	(369)	0.4
2000	664	533	(131)	0.8
2005	305*	707	402	2.3

* This decline in Accumulated Costs arises from the earlier occurrence of capital expenditures under the Sale Sequence case compared to the no-export case.

** Figures in parentheses are negative.

As can be seen, MH projected that the total revenue would exceed the total costs by over $400 million. The cost recovery analysis also indicated that the accumulated revenues would not exceed the accumulated costs until 2001.

Accounting for Uncertainty

The cost-recovery analysis submitted by the Applicant included the results of a sensitivity analysis which examined the impact of high and low rates of load growth, interest, and escalation on the net benefits of the project. The sensitivity analysis demonstrated that the project would yield net benefits to MH under a variety of assumptions for these variables. Details are provided in Appendix 6.

The Applicant also indicated that if each of the hydraulic plants being advanced had 10 percent cost overruns, the cost of making the export would increase by 8 percent from $305 to $329 million. Cost overruns of 20 percent would increase the cost of making the export by twice as much, etc.

In an information request MH was asked to explain the basis for its conclusion that "basing capacity and energy charges on the Sherco 3 unit would result in more revenue than basing such charges solely on MH's cost to make the export". The Applicant responded by stating that for it "to achieve the same revenue based upon a mark-up over cost would have required pricing at 232% of the cost to make the export".

The Applicant also provided some information on the sensitivity of revenues to coal prices in the

United States. For example, MH stated that escalation 50 percent lower than assumed in NSP's forecast coal prices would result in a $41 million reduction in net benefits. A ten percent de-escalation in assumed coal prices during the export period would result in an $84 million reduction.

Counsel for the Applicant indicated that the use of numerical values in the formula for LARR insulates Manitoba against United States legislative and regulatory changes that may affect the cost of capital. He stated that the use of the Federal Energy Regulatory Commission Uniform System of Accounts "as of the date of the agreement" ensures that no cost can be taken out of the Sherco 3 unit to the detriment of MH.

500 MW Only Sequence: One-Year Advancement of Limestone

Although MH did not provide a cost-recovery analysis based on the one-year advancement of Limestone, it did provide an analysis comparing the 500 MW Only Sequence and Sale Sequence cases. The results showed that the increased interruptible sales made possible by the additional year of advancement would yield additional net revenues of approximately $20 million.

5.8.2 Cost-Benefit Analysis

Because the results of the cost-recovery analysis may not reflect the benefits and costs to Canada due to the difference between some private and social costs, the Board requested that the Applicant provide a social cost-benefit analysis of the proposed export sale from the perspective of the country as a whole. The approach taken by the Applicant was to use the annual revenue and cost streams developed in the cost-recovery analysis and to apply adjustments wherever a difference between private and social costs could be identified and quantified. The results of the cost-benefit analysis of the Sale Sequence submitted by the Applicant are summarized in Table 5-4. Using a social discount rate of 8 percent, the Applicant found that the proposed export sale would be expected to yield benefits to Canada in the order of $163 million.

Table 5-4

Sale Sequence:
Cost-Benefit Analysis Results Submitted by MH
(present value, million of 1984 $)

	6% Social Disc. Rate	8% Social Disc. Rate	10% Social Disc. Rate
Net Revenues	190	52	(43)
Adjustment to Reflect Social Opportunity Cost of Labour	47	52	54
Adjustment to Reflect Social Opportunity Cost of Foreign Exchange	41	32	25
Adjustment to Reflect Social Opportunity Cost of Embedded Taxes	29	28	27
Adjustment to Reflect Resource Losses and Infrastructure Costs	(1)	(1)	(1)
NET SOCIAL BENEFITS TO CANADA	306	163	62

As can be seen from Table 5-4, adjustments were made to account for differences between the private and social opportunity costs of labour, foreign exchange, taxes, and capital. In addition, MH's private costs were adjusted to account for identifiable natural resource losses and infrastructure costs.

The evidence given on these adjustments is discussed below.

(i) Social Discount Rate (SDR)

The Applicant's economic consultant pointed out that whereas the private cost of capital discount rate used in the cost-recovery analysis reflects the minimum rate of return that MH would have to earn on an investment in order for that investment to be profitable, the SDR is a measure of the minimum rate of return a project must earn in order to be productive from the perspective of the country as a whole.

The consultant adopted an 8 percent SDR for his base case analysis and conducted sensitivity tests at 6 and 10 percent. Two arguments were made supporting the use of a discount rate lower than the 10 percent rate advocated in the 1976 Treasury Board guidelines on cost-benefit analysis and used by the Board in the past.

First, the 10 percent figure is based on the assumption that only 20 percent of the capital requirements of a new project will be drawn from foreign sources. The Applicant, however, expects that at least 60 percent of the financing required for this project will be relatively inexpensive foreign capital.

It was argued, therefore, that the appropriate SDR for this specific project would be lower than the 10 percent applicable to average Canadian investments. Applying the 60 percent weighting, it was concluded that the relevant SDR in this case is 8 percent.

Second, the consultant pointed out that the Treasury Board guidelines have not been updated since 1976 and that more recent research indicates that the 10 percent figure significantly overestimates the actual rate.

It was also indicated that the 5 and 15 percent sensitivity cases recommended by the Treasury Board guidelines were not relevant to this project.

(ii) Social Opportunity Cost of Labour (SOCL)

The Applicant's economic consultant pointed out that the SOCL employed in a project is the value attached to the activities in which the workers would have been engaged in the absence of that project. He argued that when workers would have been employed elsewhere, wages, as an indication of labour's productivity, can generally be considered as a reasonable measure of the social opportunity cost. The consultant also noted that when the labour hired for the project would have been otherwise unemployed, the private wage bill overstates what the economy foregoes when they are hired. Therefore, he maintained that to the extent that some of the workers hired for the project would otherwise have been unemployed, the private wage bill overstates the SOCL. The consultant indicated that the SOCL should be calculated by estimating the proportions of workers that would have otherwise been unemployed and employed, multiplied by the respective values of the foregone activities.

In estimating the SOCL associated with the Sale Sequence, the Applicant's economic consultant made the following major assumptions:

— 50 percent of the labour requirements would be met by northern Manitoba residents and 50 percent would be met by residents from southern Manitoba.

— Using a historical relationship between unemployment rates and the probability of hiring an otherwise unemployed worker, it was estimated that 90 percent of the northerners hired for the project would have been unemployed. The corresponding figure for southerners would be only 5 percent.

— The social opportunity cost of an otherwise unemployed worker is zero.

Based on the above assumptions, the consultant calculated that the private wage bill associated with the Sale Sequence overestimated the SOCL by around 47 percent. Given this, and the approximation that over 30 percent of the capital costs included in the cost-recovery analysis are labour costs, it was estimated that the private capital costs overstated the social costs by over 14 percent. Table 5-4 shows that the required adjustment ranges from \$47 to \$54 million — depending on the social discount rate used.

(iii) Social Opportunity Cost of Foreign Exchange

The economic consultant stated that the market value of the foreign exchange that would be earned by the export would undervalue the benefits from a social perspective because of the existence of import tariffs and export subsidies. He pointed out that this divergence occurs because an increase in the value of the Canadian dollar resulting from an export means that more goods can be imported or that a reduced amount of exports must be produced to pay for current levels of imports. With respect to increased import opportunities, the consultant maintained that imported goods are valued at the after-duty price in Canada, while the actual cost to Canada of acquiring these goods would only be the before-duty price. With respect to reduced export requirements to pay for current levels of imports, the consultant stated that because of export subsidies, the value of production made possible by the release of labour and capital from export production can exceed the value of the exports. It was noted that both of these effects result in a social premium on foreign exchange.

Based on estimates reported in a June 1983 paper by Glenn Jenkins and Chun-Yan Kuo, the consultant applied a 7.5 percent premium to foreign exchange earnings. Table 2 shows that the foreign exchange benefit associated with the export ranges from \$25 to \$41 million — depending on the social discount rate used. According to the consultant, a reduction in the foreign exchange premium from 7.5 percent to 6.5 percent, as advocated in a more recent paper by Jenkins and Kuo, would result in only a small decrease in the foreign exchange benefits.

(iv) Social Opportunity Cost of Taxes Embedded in Private Costs

The Applicant's economic consultant argued that water rentals, sales taxes, and other government levies, while costs from MH's own private perspective, are not real costs to Canada because these are simply transfers to governments. He pointed out that these would only constitute true economic costs if the water rentals reflected real resource costs and if the goods on which sales taxes were levied were diverted from alternative uses. He argued that real resource costs were calculated separately and that it was doubtful that the capital goods used in the project would be diverted from other projects. Therefore, these transfers were added back in the cost-benefit calculations. Table 5-4 shows that the total adjustment ranges from $27 to $29 million — depending on the discount rate used.

(v) Natural Resource Losses and Infrastructure Costs

An estimate of losses in fishing, forestry, trapping and hunting that would be attributable to the station advancements was included in the cost-benefit analysis because, while these would not be costs to the Applicant, they would be costs to the country. The adverse effects on such things as water quality were also included as costs of the export. As can be seen from Table 5-4, estimated natural resource losses and infrastructure costs are very minor in relation to the other cost components.

Counsel for the NFC expressed the concern that the economic consultant's analysis ignored any liability that MH may have arising from the arbitrator's decision on compensation under the Northern Flood Agreement. The consultant, however, pointed out that the relevant costs are those which reflect real resource losses and not necessarily all those which may arise out of any legal obligations.

(vi) Non-Quantifiables

Intervenors indicated that the fact that the analysis was not able to quantify all of the impacts of the export project, such as recreation losses, was a significant deficiency in the analysis. The economic consultant admitted that some things were left unquantified because of the difficulty of assigning monetary values. He stated, however, that these costs would be relatively minor when compared to the calculated net benefits.

(vii) Treatment of Uncertainty

In addition to the sensitivity tests on the social discount rate shown in Table 5-4, the economic consultant ran two sensitivity tests to allow for the great uncertainty associated with the estimation of the SOCL. The results show that even in the more extreme case, where no adjustment was made to the private wage bill to reflect the lower SOCL, the export would still be expected to show significant net benefits to Canada. The results of the two sensitivity tests are shown in Appendix 7.

Despite these sensitivity analyses, several of the intervenors expressed the concern that risk was not adequately addressed in the consultant's analysis. The consultant maintained, however, that the sensitivity tests that were conducted indicated with a high level of certainty that the export sales would yield net benefits to Canada.

(viii) Distribution of Project Net Benefits

Intervenors raised the question of whether the fact that MH itself may not be the beneficiary of all of the project benefits — given the involvement of the MEA in the export proposal — was relevant to the cost-benefit analysis. The economic consultant argued that the project must be evaluated from the national perspective and the allocation of costs and benefits within Canada was immaterial.

5.9 System Performance

In a normal year, most of MH's supply comes from its hydro-electric generating stations in northern Manitoba via the HVDC system. Despite its proven reliability, a major disturbance or outage of the HVDC lines would result in a shortfall on the MH system. This weakness was outlined by MH in its application and was considered in negotiating the firm power export agreement. As a result of this, the agreement was conditioned in such a way that deliveries to NSP could be reduced or curtailed if all or part of the HVDC system were out of service.

Under existing agreements MH makes summer export sales which total 500 MW. The proposed firm export will begin in 1993 when the existing agreements expire. A witness indicated that the system would not be operated any differently because of the export except for "some minor operational differences ..." which "... for the most part are immeasurable".

5.10 Environmental Impact and Provincial Review Process

The Limestone, Wuskwatim and Conawapa hydro-electric stations are integral components of a major development scheme for the Nelson and Churchill river basins which began in the '60's. Much of the flooding and environmental impact, related to river diversion and the raising of lake levels, has already occurred.

Construction of the Limestone Station began in the mid 70's but was curtailed due to low load growth. Much of the site-specific construction-

related impacts have already occurred. According to MH, in the case of Limestone, sufficient lead-time still exists so that mitigative measures, arising from a detailed environmental impact statement yet to be completed, can be implemented. The other two plants, Wuskwatim and Conawapa, will not be built for some time and, in MH's view, sufficient lead time still exists to prepare detailed environmental studies for these projects and to implement mitigative measures where required.

The evidence revealed that the major expected environmental impacts related to the proposed construction would be flooding and the temporary loss of fisheries resources. These impacts would occur with or without the export and the associated advancement of the construction projects. According to the Applicant, those adversely affected by these impacts would be compensated and any other minor impacts would be minimized by mitigative measures.

A witness testified that the operation of MH's reservoirs would not be significantly different in the export compared to the no-export case and that, if any change were evident, it would result in stabilizing reservoir levels; a beneficial effect.

The Manitoba Environmental Assessment and Review Agency (MEARA), established by the Manitoba government in 1976, requires that government proponents of projects of this magnitude conduct appropriate environmental studies. The Inter-Departmental Planning Board (IPB) is a broadly-based body at the deputy minister level that reviews and approves land use plans to ensure that they are in accordance with provincial land use policies and the Manitoba Planning Act. For the Limestone project the combined IPB/MEARA process will deal with land use, environmental and socio-economic matters. This process provides for public input into the environmental studies and may include public participation through the hearing process. A witness indicated that the type of environmental assessment contemplated by the MEARA process would be the same whether or not the in-service date of Limestone was advanced; only the timing would be affected.

MH has yet to obtain final environmental approvals from the Government of Manitoba for the construction of Limestone, Wuskwatim and Conawapa. For these last two projects, significant lead time exists for the approval process to take place. In the case of Limestone, the final approval will most likely come during the early phases of construction, and although theoretically the project could be stopped or delayed for environmental reasons, it is more likely that only mitigative measures will result.

Chapter 6
Interventions

Written submissions relative to the application were received from seventeen intervenors. All but two of the intervenors participated in the hearing. Summaries of each submission and the arguments presented by the parties are given below.

6.1 Alberta Petroleum Marketing Commission

In its intervention, the Alberta Petroleum Marketing Commission stated that its interest in the application arose from the fact that the electricity proposed to be sold by the Applicant may affect the marketability of Alberta natural gas in the area for which the electricity is destined. The Commission was represented at the hearing but did not participate.

6.2 British Columbia Hydro and Power Corporation

In its intervention, the British Columbia Hydro and Power Corporation stated that it was concerned that the licence sought by MH may be used to displace its sales directly or indirectly. The Corporation was represented at the hearing but did not participate.

6.3 Minister of Indian Affairs and Northern Development

According to the Minister's intervention, the Minister does not oppose the application, but is concerned that the negative impacts on northern residents, and more particularly on the Indian people on federal lands, that occurred in the original construction phase, should not be repeated. Counsel for the Minister stated that the Minister is confident that by working together with the affected people the Applicant can ensure that the needs, concerns and rights of native people are taken into account. The Minister believes that there exists a legitimate interest and commitment on the part of the Applicant to address the concerns of the Indian people. The Minister noted that the Applicant agreed with the importance of ensuring that employment and economic benefits from the development flow to Indian people and with the putting into place of the proper processes for addressing environmental concerns.

Counsel referred to an exchange of correspondence between the Minister and the Minister of Energy and Mines for Manitoba, who is also the Minister responsible for the administration of the Manitoba Hydro Act, outlining an environmental, social and economic management program for the proposed construction. According to the Minister the key challenge will be to ensure that there is sufficient time for these processes to be put in place.

The Minister did not ask that conditions be attached to the export licence but requested that the Board in making its decision take note of the Minister's concerns and the concerns raised by the Indian people and the indications of commitment made by the Applicant through its witnesses.

6.4 Minister of Energy for Ontario

The Minister of Energy for Ontario was represented at the hearing but did not participate.

6.5 Saskatchewan Power Corporation

SPC was not opposed to the proposed export of any firm power, nor to the export of any firm energy associated with a maximum annual capacity factor of 75%. However, SPC took the position that any energy associated with an annual capacity factor of greater than 75 % was interruptible and the Board should either:

(a) authorize for export only the power and energy provided for under the agreement between MH and NSP, that is 500 MW and the associated energy at up to 75 % annual capacity factor, or

(b) authorize 500 MW of power and the associated energy at up to 100 % annual capacity factor but require that any energy at greater than 75 % annual capacity factor be offered to SPC prior to its sale, or that it be considered as interruptible energy which could be purchased at any time by interconnected Canadian utilities in preference to the export customer.

6.6 Ontario Hydro

During final argument, Ontario Hydro commented that its understanding was that existing licences are not conditioned on supply from specific facilities or tied to a particular generation expansion plan. Ontario Hydro stated that it did not support the position of SPC that energy sold under the firm contract with NSP, between 75 and 100% capacity factor, would have to be first offered to Canadian utilities. However, if MH decided to sell additional surplus energy representing all or part of the remaining 25% under some other agreement with a US utility, then Ontario Hydro would expect that the normal rules regarding interception by Canadian utilities would prevail.

6.7 Consumers Association of Canada, Manitoba

According to its intervention, the CAC represents the interests of Manitoba consumers. The position of the CAC was that the application was incomplete and further information and evidence needed to be provided before a final decision could be made. It argued that the base case upon which MH's surplus estimates and its cost-recovery analysis were based was in question due to the probability of low load growth and because MH had not sufficiently explored other methods to supply the future domestic load requirements. It was concerned that MH had not properly accounted for all the risks associated with the proposed export and had not provided evidence sufficient to demonstrate the full impact of the export on revenue requirements or on domestic power rates. It also argued that because the purchase agreement provided that the MEA collect the export revenues there was no guarantee that the export revenues would be used to recover MH's advancement costs.

6.8 Grand Rapids Special Forebay Committee Inc.

The Grand Rapids Special Forebay Committee Inc. represents four Indian bands located in northern Manitoba who feel they have been adversely affected by previous hydro-electric projects undertaken by the Applicant, and who feel they will be affected by the Board's decision in respect of this application. Their intervention stated that this project should not proceed until the four communities affected by the Grand Rapids Hydro Project have obtained proper compensation in respect of this earlier project.

6.9 Inter-Church Task Force on Northern Flooding

The Inter-Church Task Force on Northern Flooding directly represents three religious denominations of Canadian churches and is affiliated with the nine major denominations in Canada. The Task Force was organized in 1974 to monitor the process of dealing with northern native communities in Manitoba which are directly or indirectly affected by hydro-electric development.

The central premise of the Task Force's interest in the application was that the Indian communities affected by hydro-electric development such as the construction of the Limestone, Wuskwatim and Conawapa stations, are surrendering basic resources and not receiving in exchange the types of benefits contemplated under the Northern Flood Agreement. According to the Task Force, the native people were being "paid off" in return for the destruction of their environment, by the compensation they received for the use of their lands. The Task Force was particularly concerned that employment opportunities resulting from these developments would generally be short-term in nature, and would have a negative impact on the overall lifestyles of natives. The Task Force was concerned that the computer model used by MH in determining the cost of the advancement project did not account for the social costs of the project. It requested that appropriate methods be found to include, in the calculation of the social costs of hydro-electric development, the information, understanding and insights of the northern people. It also requested that the terms of reference of an environmental assessment be much broader than currently provided for and that an environmental study be conducted in a timely manner so that it could become a key factor in determining future developments.

6.10 Northern Flood Committee Inc.

The NFC represents the approximately 9000 members of the five Indian Bands whose reserve lands are adjacent to the rivers which are directly affected by the Limestone, Wuskwatim and Conawapa hydro-electric projects. On December 16, 1977, the NFC entered into an agreement called the Northern Flood Agreement with MH, the province of Manitoba, and Canada, as represented by the Department of Indian Affairs and Northern Development, in respect of mitigation, remedial measures, and compensation for the adverse effects resulting from the hydro-electric developments occurring in Northern Manitoba.

The NFC was primarily concerned with what it perceived as the potential adverse impact of the advancement of construction of the hydro-electric stations, in particular the advancement of the Limestone station, on native employment and business opportunities. The NFC feared that its members would not be able to participate as fully if the construction schedule were advanced. Its position was that all the previous developments

that had occurred in northern Manitoba had adversely affected its members' lands and lifestyles. Furthermore the NFC maintained that MH and the government of Manitoba had persistently failed to give effect to their obligations pursuant to the Northern Flood Agreement particularly in the area of bona fide and meaningful consultation. The NFC requested that MH be required to carry out the appropriate measures to ensure that the benefit of the construction projects would go to the affected native communities, particularly with regard to employment and business opportunities. In this regard, the NFC requested the Board to condition any export licence to require that provisions of the Northern Flood Agreement be substantially implemented before construction begins.

During final argument Counsel for NFC suggested that the "advancement costs" may not be the appropriate costs to be assessed against the export. He argued that the appropriate cost might rather be a share of the total costs associated with construction of the Limestone, Wuskwatim and Conawapa plants and with all the preceding developments resulting in the Lake Winnipeg Regulation and Lower Nelson Diversion Projects.

6.11 Manitoba Keewatinowi Okimakanak Inc.

The MKO represents 25 Indian bands in northern Manitoba. The major hydro-electric projects which have been and are continuing to be carried out by MH are located within the MKO's region.

The MKO stated that adequate programs for the training of natives were not in place and that MH had a poor record with regard to native participation in earlier projects. A witness for the MKO pointed out that a number of northern native bands are not covered by the Northern Flood Agreement.

The MKO stated that it supports the export as long as certain terms and conditions related to socio-economic impact studies are attached to the licence. The MKO requested that these studies includethe development of policies, plans, practices and procedures to ensure maximization of economic benefits to all communities in the MKO area, in terms of employment and business participation; the minimizing of social costs; mitigation and compensation for deleterious social and physical effects; and a detailed plan for implementation and monitoring. Furthermore, the MKO requested that these studies be presented for public scrutiny and comment, and approved by the Board, and that MH consult with native organizations on the scheduling of these undertakings.

During the early stages of the hearing, the MKO submitted a motion that the hearing be adjourned on the basis that the MEA, who, like MH, was a signatory to the agreement, did not have the legal authority to enter into such an agreement. The MKO restated its concern on this matter during final argument.

6.12 The Progressive Conservative Party of Manitoba

The Progressive Conservative Party suggested that no evidence had been presented from which to conclude that the advancement of the in-service date of Limestone to accommodate additional interruptible sales was in the best interest of Manitoba or Canada. It also suggested that the advancement decision was made prematurely and the start of construction could be delayed a year or two.

The Progressive Conservative Party was concerned that the application did not include information to properly assess the risk associated with the proposed export. It stated that there was "a lack of coherent and comprehensive sensitivity analyses on the interest rate, construction escalation rates, foreign currency exchange rates, the alternate load growth sequences, development sequences and load growth rates".

The Progressive Conservative Party requested that if the Board were to approve the export, it should give consideration to a number of factors critical to the public interest in Manitoba. Firstly, it suggested that the Board state that a mechanism be put in place to ensure that Manitoba Hydro receives the necessary revenue from the export to cover all the associated costs and liabilities. Secondly, in its approval of the export, the Board should not inadvertently legitimatize or lend credibility to a decision to advance the construction of the Limestone generating station. Finally the Progressive Conservative Party stated that it believed the Board would be justified in suggesting that the application was premature.

6.13 D.W. Craik

Like some of the other intervenors Mr. Craik questioned the need for the advancement of Limestone to meet the requirements of the proposed export. He stated that the decision to advance the construction of Limestone was a political one made in order to create employment and was not based on economic or technical considerations. He argued that both the load forecast that was used in the application and the more recent forecast raise some doubt as to the need for the advancement. He also suggested that the six-year construction period that was now proposed by Manitoba Hydro was one year too long since earlier reports indicated that only five years were required.

Mr. Craik was concerned that the financial exposure was nearly all in the hands of Manitoba ratepayers and taxpayers. He suggested that certain combinations of interest rates, exchange rates, inflation rates, construction costs and load growth could be disastrous for Manitoba.

6.14 Manitoba Environmental Council

The Manitoba Environmental Council stated that the application did not provide an adequate assessment of the environmental implications of the advancement. It also contended that the studies contemplated by the Manitoba Environmental Assessment Review Process would not provide an adequate basis of information in order that the environmental impacts could be adequately tested and mitigative costs determined; and that, in particular, the advancement of the Limestone plant would not allow an adequate timeframe in which sufficient ecological studies could be carried out and utilized in the planning and mitigation process.

6.15 The Crossroads Resource Group of Winnipeg

The Crossroads Resource Group is an environmental organization centred in Winnipeg whose interest lies in promoting energy conservation and less energy intensive approaches to meeting the electric energy requirements of Manitoba. The position of this intervenor was that the advancement of construction of generating plants was not the most economic approach to achieving the surplus electricity required for the export. According to the Crossroads Resource Group the surplus power could be guaranteed on the basis of a systematic program that would achieve practical efficiencies in the end-use of electrical energy within Manitoba. It was the view of this intervenor that the Board should require the Applicant to provide a comprehensive least-cost analysis based on an established program called the "Long-term Simulation Model" which was developed by the Structural Analysis Division of Statistics Canada, or on an equivalent model.

The Crossroads Resource Group suggested that the Board consider three recommendations in order to deal with environmental degradation, delayed compensation and remedial action. These included: imposition of a water rental fee the proceeds of which would be payable to the affected northern communities; the requirement for retroactive interest payments payable to the affected individuals and communities on settlements dealing with environmental compensation; and the establishment of a mitigation fund by Manitoba Hydro to be available to northern and native organizations.

6.16 Attorney General of Québec

The Attorney General of Québec filed an intervention but did not participate in the hearing.

6.17 Hydro-Québec

In its intervention Hydro-Québec stated it had no particular comments to make concerning the application, but had a substantial interest in the subjects which would be discussed during the hearing. Hydro-Québec did not participate in the hearing.

Chapter 7
Disposition

The Board has given careful consideration to all the evidence and submissions presented.

Section 83 of the Act requires the Board, in examining an application for an export licence, to have regard to all considerations that appear to it to be relevant. Without limiting the generality of the foregoing, the Board is required to satisfy itself that the power to be exported is surplus to reasonably foreseeable Canadian requirements and that the price to be charged is just and reasonable in relation to the public interest.

7.1 Surplus

The surplus estimates shown in Appendices 4 and 5 result from MH's May 1983 load forecast. The Board notes that the June 1984 load forecast, which was filed during the hearing, predicts slightly lower load growth during the requested period, and correspondingly larger surpluses. The Board is satisfied that the load forecast methodology used in these forecasts is reasonable.

In its response to the offer of the proposed firm export made by MH, SPC indicated a possible interest in a firm committment by MH of up to 300 MW of power during a similar time period to that of the proposed export. While the Board has noted this possible, but somewhat uncertain, Canadian requirement, it decided that it was unnecessary to include such a possible sale to SPC in the estimates of demand shown in Appendices 4 and 5. Electricity being a "manufactured" form of energy, surpluses are created by the installation of generating facilities. In the case of the proposed export to NSP, the surplus has been created by the advancement of the in-service dates of generating stations originally scheduled to meet domestic load. It is clear that additional surplus could be created in this manner to supply other loads such as the possible requirement of up to 300 MW of firm power by SPC. With regard to surplus the Board also notes that MH indicated it was pursuing negotiations leading towards a diversity exchange with utilities in Nebraska similar in type to its existing arrangement with NSP. MH is on record as having committed itself to making available up to 300 MW of capacity and related energy to SPC under mutually acceptable terms and conditions during a period similar to the term of the proposed export to NSP. The Board expects this commitment would be honoured if it eventuated.

As previously mentioned, MH's surplus figures are based on the advancement of the in-service dates of the Limestone, Wuskwatim and Conawapa stations. The CAC questioned the need for the advancement and in particular for the advancement of the Limestone station. It was suggested that MH had a number of alternatives to the advancement of construction of generating stations to meet its domestic plus export commitments. It was also suggested that if the Board were to approve the export, it should state clearly in its decision that "such approval should not ... be deemed to be approval of the necessity of advancing Limestone".

The Board has no regulatory jurisdiction over MH's generating stations per se. However, some may argue that Board approval of the subject export would be tantamount to approval of the advancement of the in-service dates for several generating stations. The Board notes that, without the advancement of the Limestone station from 1992 to 1991, there would only be a small capacity deficiency in 1993 when supplying the domestic and export requirements, including a reasonable reserve. It appears to the Board that several options would be available to cover the small deficiency, including the chosen option of advancing Limestone by one year. Whether or not MH, in choosing the latter option, has selected the best one is not a question which the Board is called upon to decide. In the circumstances, the Board would not accept any contention that approval of this export licence application is tantamount to approval of the advancement of the in-service dates of the Limestone, Wuskwatim and Conawapa stations as being MH's best course. The Board's assessment of the export proposal has not, however, turned up anything to suggest that the utility's generation expansion decisions are wrong.

Based on its examination of the surplus figures shown in Appendices 4 and 5, the Board is

satisfied that after meeting its domestic requirements MH will have surplus power and energy to make the proposed export.

The Board notes that Ontario Hydro was not opposed to the proposed export and that SPC was not opposed to the proposed export of any firm power nor to the export of any of the firm energy associated with a maximum annual capacity factor of 75%. However, SPC took the position that any energy associated with an annual capacity factor of greater than 75% should be interruptible. SPC requested that the Board either authorize only a maximum firm energy export of up to 75% annual capacity factor or authorize any additional firm energy exports at greater than 75% capacity factor in such a way as to allow SPC to pre-empt any of these proposed deliveries of energy.

MH took the position that the energy associated with the 500 MW at an annual capacity factor of greater than 75% is "firm", and the reason it requires a licence for export of energy at up to 100% capacity factor is to provide additional flexibility in meeting its contractual obligation with NSP.

The Board notes that the Agreement contemplates a maximum monthly energy delivery of up to 80% monthly capacity factor during the summer months, May to October, and of up to 75% monthly capacity factor during the winter months, November to April, and gives MH the right to limit the annual capacity factor to a maximum of 75% in each contract year. A witness confirmed that MH could meet its contractual obligations to NSP even if deliveries of energy were restricted to a maximum annual capacity factor of 75%. Moreover, MH based both its cost-recovery analysis and its surplus tables on a maximum export of firm energy equivalent to 75% annual capacity factor.

The Board is not persuaded that a case has been made for the requested authorization of energy exports equivalent to 500 MW at 100 percent annual capacity factor.

However, the Board is satisfied that a licence authorizing a maximum energy export at an annual capacity factor corresponding to monthly capacity factors of 80% during the summer months and 75% during the winter months would permit Manitoba Hydro to meet its contractual obligations to NSP. Such a licence would have a maximum annual energy limit of 3405 GW.h corresponding to an average annual capacity factor of 78%. Moreover, the Board would condition such a licence to allow for an increase in the monthly energy limit up to as high as 100% capacity factor in any month,[1] provided that the total authorized energy export throughout the year did not exceed 3405 GW.h. The Board is satisfied that such a condition would provide sufficient flexibility for Manitoba Hydro to meet its contractual commitments and at the same time would not prejudice other Canadian utilities.

7.2 Export Price

In assessing the suitability of an export price, the Board has developed three guidelines: the export price should recover the applicable costs incurred in Canada, it should not be less than the price for equivalent service to Canadian customers, and it should not be materially less than the least cost alternative in the proposed market area.

7.2.1 Applicable Costs in Canada

When assessing whether the export price associated with a proposed export meets the first price guideline, it is normal for the Board to compare the export price and associated revenue to the costs which are directly associated with, or are the direct results of, the particular proposed export. The Applicant has stated that the appropriate cost to be assessed against the export are the "advancement costs" of the Limestone, Wuskwatim and Conawapa stations. Counsel for NFC suggested that the "advancement costs" may not be the appropriate costs to be assessed against the export. He argued that the appropriate cost might rather be a share of the total costs associated with construction of the Limestone, Wuskwatim and Conawapa stations and with all the preceding developments resulting from the Lake Winnipeg Regulation and Lower Nelson Diversion Projects.

In the Board's view, it is clear that the Lake Winnipeg Regulation and Lower Nelson Diversion Projects have been undertaken to provide sufficient hydraulic resources to serve the present and future provincial loads and in any case their associated costs are "sunk costs". Likewise the evidence shows that the Limestone, Wuskwatim and Conawapa stations will be required to serve future provincial loads. Since the only change in MH's generation expansion plans required to make the export is the advancement of the construction of these three stations, in the Board's view the appropriate costs to be assessed against the export are those associated with the advancement.

The Board notes that MH has based its cost-recovery analysis on a two-year advancement of the Limestone station in-service date from 1992 to 1990, and has relied on the results of this cost-recovery analysis as support that the first price guideline is met. However, it is not clear that the costs and benefits associated with the second year of advancement, from 1991 to 1990, are directly related

[1] Equivalent to a maximum of 370 GW.h in any month.

to the proposed firm export since MH took the position that only a one-year advancement of Limestone was necessary to make the firm export.

In addition to the net benefits of increased interruptible sales due to the extra year of advancement, the Board also notes that MH has included as a small cost in its cost-recovery analysis the negative impact of the firm exports on interruptible sales revenue in certain years during the 1990 to 2005 period. This lost revenue is due to the displacement of the interruptible sales that would otherwise be made by MH in the absence of the firm export.

In the course of examining the Applicant's economic analysis the Board has carefully examined the cases representing both the Sale Sequence and the 500 MW Only Sequence cases. The evaluation of the 500 MW Only Sequence case, assuming only the one-year advancement required to meet the proposed firm export sale, shows that the excess of MH's revenues over its costs is expected to exceed $365 million. From the broader Canadian perpective, the economic analysis shows that the social net benefits to Canada exceed costs by around $100 — $170 million — depending on whether adjustments are made to reflect the social opportunity costs of labour and foreign exchange. The Board notes that, for the Sale Sequence, from MH's perspective the excess of revenues over costs for the two-year advancement would be about $20 million more than for the one-year advancement. From the perspective of Canada as a whole, corresponding benefits would be in a similar range as those for the one-year advancement.

The Board observes that while it is true that the cost-recovery period associated with the proposed export is a long one, the estimated revenues will substantially exceed the estimated costs over the period of the export. The Board is satisfied that over the long term the export will be beneficial to Canada. The Board also notes the Applicant's statement that a mark-up of 232% over the cost of making the export would be required to achieve the same revenue that is achieved basing the capacity and energy charges on Sherco 3 costs. The Board is satisfied that there is a substantial margin to cover any cost overruns that might occur.

Both the Manitoba Keewatinowi Okimakanak Inc. and the Consumers Association of Canada argued that because the purchase agreement provides that the MEA is to collect the export revenues there is no guarantee that the export revenues will be used to recover MH's advancement costs. The question of how export revenues are allocated to recover their applicable costs in Canada has not usually been of concern to the Board provided that the Board was able to satisfy itself that these revenues would indeed provide benefits to Canada as a whole. In this case, Board is satisfied that the revenues from this export will accrue to the benefit of Manitoba and Canada.

Based on the above considerations the Board finds that the export revenues will exceed the associated costs and is satisfied that the export price will recover its appropriate share of the costs incurred in Canada.

7.2.2 Price for Equivalent Service to Canadians

In order to make a determination regarding the second price guideline, information is required on prices obtained by MH for sales to interconnected Canadian utilities which are equivalent to the type of export sale being contemplated. The Board has been unable to find much evidence upon which to base a determination regarding this guideline. There are no agreements in place between MH and either OH or SPC covering the sale by MH of long-term firm power and energy during the proposed export period. However, the Board is aware that the export price would be substantially greater than the rates paid by the Applicant's large industrial customers. While these rates are not directly comparable because the service provided to industrial customers is not "equivalent" to the service provided to NSP, they do demonstrate that the proposed export price would exceed domestic bulk power rates. In addition, the Board notes that the offers to both OH and SPC of the proposed export were based on the proposed export price, and both utilities indicated they would not require the proposed firm export[1].

The Board is satisfied that the export price will not be less than the price for equivalent service to Canadian customers.

7.2.3 Purchaser's Least Cost Alternative

The Board notes that NSP's least cost alternative, a lignite coal-fired plant, would have costs equivalent to 94 % of the estimated Sherco 3 costs in 1993 and 86 % in 2004. Thus a price based on 80 % of the Sherco 3 costs as contemplated in the agreement with NSP might be held to be not materially less than NSP's least cost alternative. However, the capacity pricing formula includes the factor "ADJ" to account for the shorter duration of the proposed export compared to the expected life of Sherco 3. The effect of this factor is to ensure that the total present value of NSP'S fixed charges

[1] OH stated that it was not economic for it to buy the power. SPC stated that it "would not require any portion of the firm power and firm energy" to be sold to NSP provided it would be assured by MH that MH would be able to supply a firm commitment of up to 300 MW to SPC during a similar time period as that of the proposed export. In a letter dated 8 November 1984 MH provided this assurance to SPC.

will be equivalent to what they would have been had NSP included a 500 MW coal-fired unit, with an in-service date of 1993, in its generation expansion plan. The Board, while understanding this line of reasoning, also recognizes that this factor could result in a capacity price materially less than the purchaser's least cost alternative. The Board notes, however, that militating against this is the higher cost of Sherco 3 relative to the least cost alternative and the fact that the Sherco 3 costs would be escalated to 1 May 1993 to derive the Capital Investment used in the pricing formula. Also, both the capacity and energy pricing formulae contain factors which would adjust the price to account for inflation. The Board is satisfied that in the circumstances of this case the export price is the best price that could be negotiated by the Applicant in its particular United States market.

Consequently while the Board recognizes that the evidence has shown that the export price may be materially less than the purchaser's least cost alternative, it is satisfied that the export price is just and reasonable in relation to the public interest.

7.3 Economic Analysis

In order to verify the reasonableness of the Applicant's cost-recovery and cost-benefit analyses the Board has conducted its own analyses based on the information submitted by the Applicant. The results of the Board's analyses, along with its views on the various adjustments affecting the cost-benefit analysis, are discussed below.

7.3.1 Cost-Recovery Analysis

In the Board's cost-recovery analysis the approach taken — as in the Applicant's analysis — was to determine the difference in net revenues to MH between the export sale and the no-export sale cases.

The results of the Board's analysis for the Sale Sequence showed that MH could be expected to derive net revenues of about $385 million from the two-year advancement case. This compares with net revenues of $402 million estimated by MH. The analysis also indicated that MH's accumulated revenues would not exceed the stream of accumulated costs until the year 2001.

The results of the Board's analysis for the 500 MW Only Sequence, which is associated with a one-year advancement of Limestone, showed that MH could be expected to derive net revenues of some $365 million. As with the Sale Sequence, the analysis showed that the accumulated net revenues would not turn positive until the year 2001.

A comparison of the results of the Sale Sequence and the 500 MW Only Sequence shows that the additional interruptible sales that would be possible with an additional year of advancement of Limestone would yield an extra $20 million to MH. This is the same result as estimated by MH.

7.3.2 Cost-Benefit Analysis

The Board also conducted social cost-benefit analyses of the Sale Sequence and the 500 MW Only Sequence cases. Like the Applicant's economic consultant, the Board considered making adjustments to account for differences between the private and social costs of labour, foreign exchange, embedded taxes, natural resource losses and infrastructure costs, and capital. The Board's views on the various adjustments are discussed below.

(i) Social Discount Rate (SDR)

The Board agrees with the Applicant's consultant that an 8 percent SDR is appropriate for use in the base case analysis. However, the Board does not agree with the consultant's argument that the SDR should vary by project depending on the sources of funding. All investments must compete for a limited quantity of funds at a given interest rate and, therefore, from a national point of view, they are to some extent interrelated through the interest rate. For this reason the Board advocates the use of a unique SDR regardless of the specific sources of financing for any project.

As to sensitivity tests for the SDR, the Board is of the view that a range of 5 to 15 percent would likely be too wide in most cases. Given a base case SDR of 8 percent, the consultant's sensitivity cases of 6 and 10 percent are probably sufficient to bracket the range of uncertainty.

(ii) Social Opportunity Cost of Labour (SOCL)

In light of current high unemployment, the Board is of the opinion that, in a cost-benefit analysis, adjusting wages to reflect lower social costs is appropriate. Unfortunately, it is not easy to arrive at an estimate of the SOCL in which one can have much confidence. In the case of this application, trying to determine what proportions of the workforce would be attracted from Northern and Southern Manitoba is difficult enough, but determining the proportion of these workers that otherwise would have been unemployed is even more elusive. Further, it is difficult to ascribe a value to the activities a previously unemployed worker foregoes when taking a job.

In spite of the empirical difficulties, the Board is of the opinion that the general approach used by the Applicant's economic consultant is reasonable. However, the results that were reported may underestimate the SOCL somewhat for the following three main reasons.

First, the 50 percent estimate of northern employment used in the analysis may be a bit high in light of the historical record.

Second, ascribing a cost of zero to workers drawn from the unemployed underestimates their opportunity costs. It is apparent that even the previously involuntarily unemployed would ascribe a value higher than zero to their leisure. In the case of the previously voluntarily unemployed, the Applicant's economic consultant admitted that the value of this leisure time, as measured by the difference between the after-tax wages required to induce someone to take a job and any unemployment insurance benefits, could be in the area of $5,000 per person-year.

Third, it is possible, as some studies indicate, that the social opportunity cost of temporary jobs will be higher than for permanent jobs and may even exceed the wage bill. The reason for this is that the creation of temporary employment leads to increased unemployment insurance benefits to temporary workers which, although not reflected in the wage bill, are part of the total remuneration package necessary to induce these workers to take jobs.

Recognizing the uncertainties associated with the estimates used in the SOCL calculation, the consultant provided a sensitivity case in which the private wage bill was used rather than the estimated SOCL. This would almost certainly overestimate labour costs from a national perspective. Nevertheless, the project still showed net benefits at not only an 8 percent discount rate, but also at a 10 percent rate.

(iii) Social Opportunity Cost of Foreign Exchange

The Board is not convinced that the theoretical and empirical problems associated with this issue have been resolved to the extent that adjusting foreign exchange earnings to reflect a social premium is necessarily justified.

(iv) Social Opportunity Cost of Taxes Embedded in Private Costs

The Board agrees with the Applicant's consultant's argument that, in the case of this export, such private costs as water rentals and federal and provincial sales taxes would mainly constitute transfers from a social perspective.

(v) Natural Resource Losses and Infrastructure Costs

Given the level of detail on the likely natural resources losses and infrastructure costs provided by the Applicant, and due to the absence of any evidence confuting the estimates, the Board is satisfied with the approach used. Further, the Board agrees with the consultant that actual resource losses, and not the costs arising from an arbitration ruling, are the relevant costs to be included in the analysis.

(vi) Non-Quantifiables

The Applicant's consultant admitted that some factors were left unquantified due to the difficulty of assigning monetary values. However, the Board is satisfied that these unquantified aspects would likely be small in monetary terms in comparison to the quantified benefits and costs.

(vii) The Treatment of Uncertainty

The Board is of the view that the economic consultant has adequately addressed the uncertainty associated with the proposed exports through the sensitivity tests that were conducted.

(viii) Distribution of Project Net Benefits

Regarding the concerns raised by some intervenors that MH may not be the sole beneficiary of the benefits of the project, the Board agrees with the Applicant's consultant that the cost-benefit analysis should be conducted from a national perspective.

Cost-Benefit Analysis: Findings of the Board

In the case of the Sale Sequence, the proposed export is expected to yield net benefits to Canada of from $90 to $170 million using an 8 percent social discount rate — depending on whether labour and foreign exchange adjustments are included. If a 10 percent social discount rate is used and a foreign exchange adjustment is not included the proposed export still is expected to yield net benefits to Canada. The results for the 500 MW Only Sequence show that the firm export is expected to yield net benefits of from $100 to $170 million using an 8 percent discount rate — depending on whether labour and foreign exchange adjustments are included. The export still shows net benefits under a 10 percent discount rate if no labour and foreign exchange adjustments are included.

Based on the evidence submitted by the Applicant, and on its own analysis, the Board's finding is that there is a high degree of certainty that the firm export will yield net benefits to Canada, under either the two-year or one-year advancements.

7.4 Socio-Economic Considerations

7.4.1 Socio-Economic Impact

Concerns expressed by many intervenors during the hearing focussed on the potential impacts of the advancement of the construction schedule for Limestone. The concerns centred on the shortened time period available for natives to prepare to participate in Limestone-related work. Wuskwatim

and Conawapa were considered to be sufficiently far in the future to present no immediate problems.

Counsel for MH argued that the advancement would not prejudice the ability of northerners to be employed. He based this assertion on plans being developed by the Government of Manitoba and MH to ensure that northern native residents have every opportunity to take advantage of employment and economic development benefits accruing from the construction of Limestone. Further, he cited the exchange of letters between the Minister of Energy and Mines for Manitoba, who is also the Minister responsible for the administration of the Manitoba Hydro Act, and the Minister of Indian Affairs and Northern Development as proof that Limestone would be different from earlier hydro projects.

The Board recognizes that there is a potential for the advancement of the construction of Limestone to have an adverse impact. The advancement will decrease the amount of time available to train and prepare for employment and business opportunities and this might result in a decrease in native involvement. However, this argument presumes that the extra time available without the advancement would be used for training and other preparation for native involvement; in this regard the Board notes that the pressure of imminent development such as the proposed Limestone project is often required to justify an allocation of scarce resources to an activity.

7.4.2 Licensing Conditions

The MKO and the NFC have each requested that the Board impose certain terms and conditions in any licence which might be granted, as discussed in sections 6.10 and 6.11.

Turning first to the NFC, this intervenor requested that the Board require that provisions of the Northern Flood Agreement be substantially implemented before construction of the Limestone Plant begins. The question of the relevance of the Northern Flood Agreement in the proceedings and the scope of questioning which could be pursued was considered by the Board during the course of the hearing. The Board ruled that insofar as the advancement of plants may affect the ability of MH to comply with its obligations under the Northern Flood Agreement, those are matters which should be taken into consideration in deciding whether an export licence should be granted. In addition, the Board stated that insofar as there may be any social, economic or physical effects or costs resulting from the advancement which may flow from MH's obligations under the Northern Flood Agreement, these matters are relevant and should be considered. This ruling was consistent with the Board's letter to all interested parties dated 24 October 1984[1].

The Board is sympathetic to the concerns of the NFC and is aware that there have been difficulties encountered by native groups in previous northern development. The Board agrees that it is in the best interests of Manitoba and Canada that the Northern Flood Agreement be effectively implemented. However, after having given this matter careful consideration, the Board is of the view that the scope of the requested condition is too broad, given the limited nature of the export application before the Board for consideration. The condition suggested covers the obligations of the parties to the Northern Flood Agreement in respect of the whole of the Lake Winnipeg Regulation and Churchill River Diversion Project (defined as the Project including any substantially similar redevelopment thereof) and not just in respect of the advancement of the construction of the Limestone and future Wuskwatim and Conawapa Stations. In addition, the Board notes that procedures have been set up under the Northern Flood Agreement to deal with the resolution of grievances. As stated in the Board's ruling on 8 November 1984, the Board would not, in any way, wish to supplant those procedures which have been agreed to by the parties.

Turning secondly to the MKO, this intervenor requested that the Board impose terms and conditions to ensure that, prior to the construction of Limestone, certain studies be carried out and programs initiated through consultation between Manitoba Hydro and native organizations to ensure that the maximum benefit of the construction projects will go to the affected native communities, particularly with regard to employment and business opportunities. The MKO suggested that these studies should be presented for public scrutiny and approved by the Board. Reference was made in the evidence of the MKO to similar terms and conditions imposed by the Board in a Certificate of Public Convenience and Necessity issued to Interprovincial Pipe Line (NW) Ltd. for a pipeline extending from Norman Wells in the Northwest Territories to Zama, Alberta.

[1] In its letter dated 24 October 1984 to all interest parties the Board stated that while the NEB Act does not confer on the Board jurisdiction to regulate the generating planning practices of a provincial utility, or the scheduling or construction of plants for domestic use, the Board's jurisdiction does extend to consideration of the impacts associated with the advancement of construction of facilities required for export.

The Board recognizes the concerns of the MKO and believes that such consultative and planning activities between affected native groups and the Applicant similar to those described by the MKO, leading to increased native participation in MH's northern activities, are in the public interest. The Board notes that the circumstances at hand are very different from those which surrounded the granting of a Certificate of Public Convenience and Necessity to Interprovincial Pipe Line (NW) Ltd. In that case, the Board had direct jurisdiction over the facilities in question and the Board was of the view that the studies required by the terms and conditions of the Certificate and the process of consultation with parties of record was necessary to ensure that the facilities were constructed in a manner consistent with the public interest. Having given these matters careful consideration, the Board has concluded that, in the context of the current application, it would not be appropriate for the Board to impose these obligations as a part of the terms and conditions of any licence which might be granted. From the evidence at this hearing, the Board notes that there is a process set up under provincial law, namely the IPB/MEARA process, wherein the MKO's requested terms and conditions could be considered. In the Board's opinion, that would be a more appropriate forum for direct and effective resolution of the MKO's concerns.

During final argument, the question of the jurisdiction of the Board to impose the terms and conditions requested by the NFC and the MKO was raised. In light of the Board's decision on the requested terms and conditions, the Board finds that it is unnecessary to rule on this matter.

In arriving at its decision on the requests of the MKO and the NFC, the Board has had regard to the fact that the Minister of Indian Affairs and Northern Development, who is a signatory to the Northern Flood Agreement and who is responsible for Indian people in Manitoba affected by the proposed project, did not request similar terms and conditions and did not indicate his support for the requests of the MKO and the NFC. Moreover, the Board notes the intentions of the Government of Manitoba, MH and the Minister of Indian Affairs and Northern Development with respect to the plans being developed to ensure that the needs, concerns and rights of native people are taken into account. The Board hopes that these intentions will be put into action so that the construction of the various hydro-electric facilities can proceed in a manner fully consistent with the public interest.

There is a much longer lead time available for Wuskwatim and Conawapa and the Board recommends that this time be used effectively to further prepare northern people for the proposed development.

7.5 Environmental Impact

The Applicant intends to supply the export from its system hydraulic generation. The only environmental impacts resulting from the export would be those associated with the advancement of the in-service dates of the Limestone, Wuskwatim and Conawapa stations. The evidence shows that the expected environmental impacts resulting from the construction projects will occur with or without the export and the associated advancement of these projects. The evidence also shows that changes to resevoir levels resulting from the export will be possibly beneficial. The Board is therefore satisfied that no material adverse environmental impact would result from the production of power or energy which the Applicant seeks to export.

7.6 Other Considerations

Several intervenors argued that the proposed export involves serious economic risks associated with uncertainties in the future which have not been adequately examined or estimated in the application. They suggested that the Board find that it needed further evidence before it could render a decision on the application.

The Board understands that some level of risk is reasonable and necessary in order to obtain the benefits accruing from an export or from any other major undertaking. However, the Board expects that these risks would be adequately assessed in any application presented for an export licence. In the case at hand the Board notes that a sensitivity analysis has been included in the Applicant's cost-recovery analysis. The Board accepts that the sensitivity analysis addresses risks and demonstrates that under conditions of lower or higher interest rates and escalation rates, and different load growth rates, benefits to the Applicant remain substantial. The Board also notes that the export contract and the pricing formulae contain features and provisions which would minimize the impact on the Applicant's revenues of significant reductions in Sherco 3 costs resulting from United States government actions or changing economic and financial conditions. As stated earlier, in the section on the Board's Economic Analysis, the Board believes that uncertainty has been adequately addressed in the Applicant's cost-benefit analysis.

Based on these considerations the Board is satisfied that there is sufficient evidence to show that the risks associated with the proposed export have been adequately examined and are within acceptable bounds.

In a ruling on an information request by the CAC, the Board stated that "the potential effect of exports on the rates paid by MH's general consumers is relevant to this application"[1]. It later reiterated this by stating "what is relevant to these proceedings is whether or not, and the extent to which, revenue from the export to NSP will result in benefits to the domestic power consumers of MH". In making these statements, the Board recognized that domestic rate regulation falls under provincial jurisdiction. Nevertheless, the extent to which the revenues from an export would have a beneficial effect on the rates paid by domestic power consumers is relevant to the Board's assessment of any export application in which such benefits are cited as one of the advantages of proposed exports. In this proceeding, the Board ruled that the effect of the export revenue on domestic power rates was relevant because this effect was emphasized by Manitoba Hydro as a benefit of the export by the inclusion in its application of detailed projections of the effect of the export on revenue requirement. However, the Board's basic concern is that it be able to satisfy itself that the export price will recover its appropriate share of the costs incurred in Canada and that the export revenue will provide benefits to Canada. The Board has been satisfied on both these matters in this case.

In final argument, Counsel for the MKO suggested that the MEA had no legal authority to enter into the export agreement, was therefore not a proper signatory to the agreement, and that the Board should re-examine its earlier ruling on the role played by the MEA in the application. The Board having had the opportunity to review its earlier decision on this matter and all the evidence adduced throughout the hearing, acknowledges that the MEA has had and will continue to have a prominent role to play in this export proposal. However, the Board has been unable to find any new evidence which would convince it to reconsider its earlier decision. The Board continues to find that Manitoba Hydro is the principal owner and operator of the electrical facilities and producer of electricity in Manitoba and, therefore, would be the appropriate holder of any export licence which the Board might be prepared to issue. The Board continues to be satisfied that the proposed export is covered by a legally binding agreement between the buyer, NSP, and the Applicant, MH, and the question of the legal capacity of the MEA to enter into such an agreement does not, in the Board's view, diminish the commitment of MH to the export. Therefore, the question of whether or not the MEA is a proper signatory to the agreement is not a matter which the Board finds it should attempt to settle, or indeed, needs to settle in this decision.

7.7 The Board's Finding

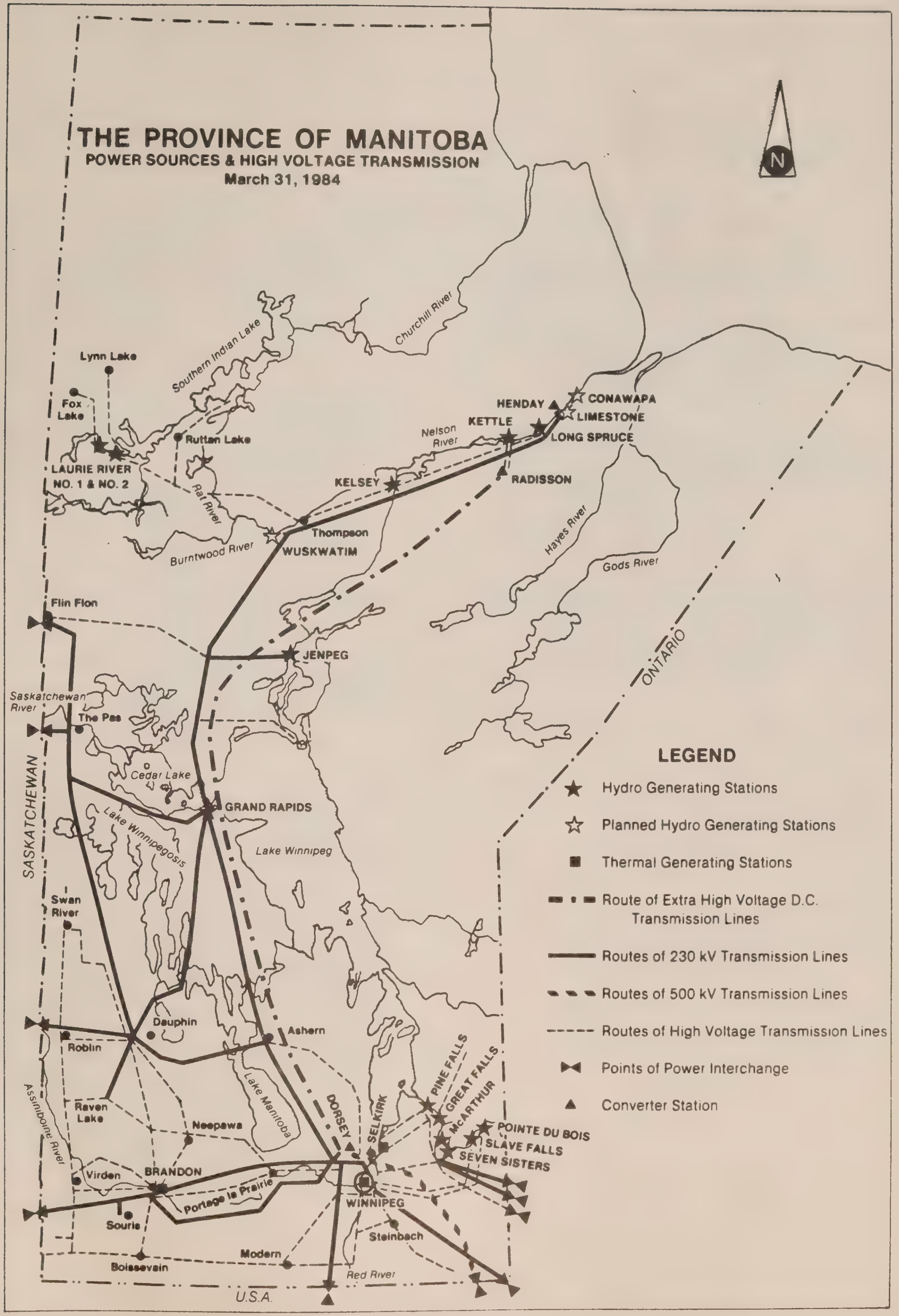
In view of the foregoing, the Board, having satisfied itself that the power and energy to be exported are surplus to reasonably foreseeable Canadian requirements, and that the prices to be charged are just and reasonable in relation to the public interest, and having had regard to all other considerations that appear to it to be relevant, is prepared to issue to Manitoba Hydro a licence authorizing the export to NSP of firm power of up to 500 MW and firm energy of up to 3405 GW.h per consecutive 12-month period from 1 May 1993 to 20 April 2005. Applicable terms and conditions are set out in Appendix 8.

R.F. Brooks
Presiding Member

J.L. Trudel
Member

R.B. Horner Q.C.
Member

[1] Page 297 of the transcript of the proceeding.


THE PROVINCE OF MANITOBA
POWER SOURCES & HIGH VOLTAGE TRANSMISSION
March 31, 1984
N
Churchill River
Southern Indian Lake
Lynn Lake
Fox Lake
Ruttan Lake
LAURIE RIVER NO. 1 & NO. 2
Rat River
Burntwood River
Thompson
WUSKWATIM
KELSEY
Nelson River
KETTLE
HENDAY
CONAWAPA
LIMESTONE
LONG SPRUCE
RADISSON
Hayes River
Gods River
ONTARIO
Flin Flon
JENPEG
Saskatchewan River
The Pas
Cedar Lake
GRAND RAPIDS
SASKATCHEWAN
Lake Winnipegosis
Lake Winnipeg
Swan River
Dauphin
Roblin
Ashern
Raven Lake
Lake Manitoba
Neepawa
Assiniboine River
Virden
BRANDON
Portage la Prairie
Souris
Boissevain
Modern
DORSEY
SELKIRK
WINNIPEG
Steinbach
Red River
U.S.A.
PINE FALLS
GREAT FALLS
McARTHUR
POINTE DU BOIS
SLAVE FALLS
SEVEN SISTERS
LEGEND
Hydro Generating Stations
Planned Hydro Generating Stations
Thermal Generating Stations
Route of Extra High Voltage D.C. Transmission Lines
Routes of 230 kV Transmission Lines
Routes of 500 kV Transmission Lines
Routes of High Voltage Transmission Lines
Points of Power Interchange
Converter Station

Appendix 2

Power Agreement — Details of Pricing Components and Penalty Provisions

A Pricing Components

1) Capacity Pricing

Manitoba shall bill NSP monthly beginning 31 May 1993 for the 500 MW capacity purchase as follows:

Monthly Capacity Bill ($) = 1/12 × 0.8 × 500 000 × CI × LARR X ADJ

Where: CI is the Capital Investment in $ per kW.

LARR is the Levelized Annual Revenue Requirement.

ADJ is an adjustment factor which reflects the fact that the contract term is shorter than the life of Sherco 3.

Capital Investment (CI)

The capital investment will be the total installed cost of NSP's share of Sherco 3 based on the capital charges associated with Sherco 3 at the time Sherco 3 begins commercial operation expressed in $/KW based on the actual net generating capacity of NSP's share. This cost shall be escalated from the date of commercial operation to May 1993 using the Handy-Whitman Index of Public Utility Construction Costs for Steam Production Plants in the North Central Region. In the event additional capital expenditures are required on Sherco 3 to meet new United States federal regulations, these expenditures will be expressed in $/KW and included in the Sherco 3 capital cost at the time they are made. The Adjustment Factor to be applied to these additional investments will be based on the remaining duration of the contract at the time the investments are made.

Levelized Annual Revenue Requirements (LARR)

$$\text{LARR} = \frac{(\text{Return} + \text{Depreciation} + \text{Income Taxes} - \text{Allowance for Funds During Construction})}{\text{Total Investment}}$$

LARR shall be calculated at the beginning of each Contract Year using the Cost of Capital components and formula defined in Schedule 1 of the Power Agreement.

Adjustment for Duration (ADJ)

The formula for the Monthly Capacity Bill includes an adjustment for duration to reflect the fact that the 12-year contract term is shorter than a typical generating plant service life. This adjustment shall be determined each year using the following formula:

$$\text{ADJ} = \frac{(1 + D)^{33} - 1}{(1 + D)^{12} - 1} \times \frac{(1 + D)^{12} - (1 + E)^{12}}{(1 + D)^{33} - (1 + E)^{33}}$$

Where: *D* is the Cost of Capital calculated at the beginning of each Contract Year using the formula and definition in Schedule 1 of the Agreement.

E is the effective annual escalation rate during the previous 5-year period determined from the Handy-Whitman index.

33 is the life in years of Sherco 3.

12 is the twelve Contract Years.

2) **Energy Pricing**

Manitoba shall bill NSP monthly beginning 31 May 1993 for the energy delivered as follows:

Monthly Energy Bill ($) = 0.8 × (Fixed Operating Costs + Variable Operating Costs of Sherco 3)

Where the Fixed and Variable Operating Costs are as defined in Schedule 2 of the Agreement.

In general the Fixed and Variable Operating Costs include the property tax, administrative and general expenses, fixed and variable operating and maintenance costs and fuel costs, where the fuel cost component to be used for each month of the contract period shall be equal to the 1 May 1993 fuel cost component escalated from 1 May 1993 to that month at the same rate of escalation as the primary coal price at the point of origin (the mine-mouth cost of the coal supply for Sherco 3).

B **Penalty Provisions**

NSP Penalty

If NSP accepts less than the scheduled amount of 3285 GW.h[1] (3294 GW.h in a leap year) at the end of the Contract Year it shall pay Manitoba as follows:

[1] The parties may mutually agree to a different schedule in any year.

NSP Payment ($) = (L-A) × 0.8 × B

Where: *L* is the scheduled amount

A is the amount of energy delivered to NSP in the Contract Year

B is the Variable Operating Cost in $ per MW.h.

Manitoba Penalty

If Manitoba has not made available part or all of the scheduled amount at the end of the Contract Year it shall pay NSP the lesser of the following:

(i) $P = C \times 1.2 \times B + F \times 0.8 \times B$, or

(ii) $P1 = P \times \dfrac{L - A}{C + F}$

Where: A, B and L are as defined above.

C is the amount of energy scheduled for delivery to NSP for which delivery was restricted due to the unavailability of Limestone units or the unavailability of sufficient HVDC transmission or firm generation.

F is the amount of energy scheduled for delivery to NSP for which delivery was restricted due to the unavailability of the 500 kV facility from Winnipeg to Minneapolis.

Appendix 3

Manitoba Hydro & Winnipeg Hydro
Integrated Generating System
(1983/84 Winter Capacity)[1]

	Station	Winter Capacity (MW)
Hydraulic:	Great Falls	132
	Seven Sisters	150
	Pine Falls	82
	McArthur	56
	Grand Rapids	472
	Kelsey	224
	Kettle	1272
	Jenpeg	126
	Long Spruce	980
	Laurie River	10
	Pointe du Bois[2]	72
	Slave Falls[2]	68
	Total	3644
Thermal Steam — Lignite Fired Capacity (Brandon, Selkirk)[3]		369
Gas Turbine		24
Diesel (system)		3
(isolated)		24
Total installed winter capability		4064

1 Source — MH 1983 Annual Report
— Capacities for Winnipeg Hydro Plants taken from Statistics Canada publication 57-206.

2 Owned by Winnipeg Hydro.

3 Selkirk is now used as a synchronous condenser rather than a generating facility.

**MANITOBA HYDRO
CAPACITY, DEMAND AND SURPLUS POWER
AT TIME OF ANNUAL PEAK DEMAND*, WITH
CAPACITY ADVANCEMENT
(MW)**

	1993/94	1994/95	1995/96	1996/97	1997/98	1998/99	1999/00	2000/01	2001/02	2002/03	2003/04	2004/05
EXISTING HYDRO POWER CAPABILITY	3548	3548	3548	3548	3548	3548	3548	3548	3548	3548	3548	3548
LIMESTONE	1280	1280	1280	1280	1280	1280	1280	1280	1280	1280	1280	1280
WUSKWATIM			88	350	350	350	350	350	350	350	350	350
CONAWAPA						130	780	1300	1300	1300	1300	1300
THERMAL POWER CAPABILITY	369	369	369	369	369	369	171	105	105	105	105	105
TOTAL DEPENDABLE POWER CAPABILITY	5197	5197	5285	5547	5547	5677	6129	6583	6583	6583	6583	6583
DOMESTIC DEMAND**	3946	4060	4184	4291	4408	4510	4613	4698	4787	4878	4974	5138
RESERVE***	474	487	502	515	529	541	554	564	574	585	597	617
SURPLUS	777	650	599	741	610	626	962	1321	1222	1120	1012	828

* NORMALLY OCCURS IN JANUARY
** BASED ON MAY 1983 LOAD FORECAST
*** 12% OF DOMESTIC DEMAND

Appendix 5

MANITOBA HYDRO ANNUAL DEPENDABLE CAPABILITY, LOAD AND SURPLUS ENERGY WITH CAPACITY ADVANCEMENT (GW.h)

	1993/94	1994/95	1995/96	1996/97	1997/98	1998/99	1999/00	2000/01	2001/02	2002/03	2003/04	2004/05
EXISTING HYDRO	17010	17010	17010	17010	17010	17010	17010	17010	17010	17010	17010	17010
LIMESTONE	5455	5455	5455	5455	5455	5455	5455	5455	5455	5455	5455	5455
WUSKWATIM			318	1760	1760	1760	1760	1760	1760	1760	1760	1760
CONAWAPA						527	4430	5175	5175	5175	5175	5175
TOTAL HYDRO	22465	22465	22783	24225	24225	24752	28655	29400	29400	29400	29400	29400
THERMAL	1865	1865	1865	1865	1865	1865	1390	758	600	600	600	600
TOTAL IN-PROVINCE	24330	24330	24648	26090	26090	26617	30045	30158	30000	30000	30000	30000
FIRM IMPORTS	1500	1500	1500	1500	1500	1500	1500	1500	1500	1500	1500	1500
TOTAL CAPABILITY	25830	25830	26148	27590	27590	28117	31545	31658	31500	31500	31500	31500
DOMESTIC LOAD	18999	19572	20193	20782	21355	21914	22465	22917	23366	23787	24242	24697
SURPLUS	6831	6258	5955	6808	6235	6203	9080	8741	8134	7713	7258	6803

Applicant's Cost-Recovery Analysis — Detailed Results of Sensitivity Analysis

To allow for risk, MH also conducted cost-recovery analyses under various load growth and interest rate assumptions. The results are summarized below.

Sensitivity Analysis Results
(present value millions of 1984 $)

Assumptions	Total Sales Costs	Total Sales Revenues	Revenue/Cost Ratio
High Load Growth (4.0%/year)	433	707	1.6
Low Load Growth (2.0%/year)	259	707	2.7
High Interest/ Escalation (14% int., 9% esc.)	329	695	2.1
Low Interest/ Escalation (8% int., 5% esc.)	281	785	2.8

Applicant's Cost-Benefit Analysis — Sensitivity Tests on the SOCL

The Applicant economic consultant performed two sensitivity tests on the SOCL in the cost-benefit analysis. In the first test it was assumed that employment conditions would improve after the 1980s, thereby reducing the probability of hiring a worker who otherwise would have been unemployed. In this case, therefore, an adjustment to the private wage bill to reflect the SOCL was applied only for the 1984-1989 period.

In the second sensitivity test, no adjustment was applied to the private wage bill. Thus, no benefit is conferred for the hiring of a previously unemployed worker.

The results of the two tests are shown below. It is apparent that even when no labour benefit is included the consultant expects that the Sale Sequence will yield significant net benefits to Canada at a discount rate of 8 percent.

Opportunity Cost of Labour Sensitivity Results (present value million of 1984 $)

	Adjusted Throughout	Adjusted Only in 1980s	No Adjustment
Net Revenues	52	52	52
Adjustment to Reflect Social Opportunity Cost of Labour	52	51	0
Adjustment to Reflect Social Opportunity Cost of Foreign Exchange	32	32	32
Adjustment to Reflect Social Opportunity Cost of Embedded Taxes	28	28	28
Adjustment to Reflect Resource Losses and Infrastructure Costs	(1)	(1)	(1)
SOCIAL NET BENEFITS	163	163	112

(Proposed Licence EL-170)

Terms and Conditions of Export Licence for Firm Power and Energy — NSP

1. The term of this licence shall commence on 1 May 1993 and shall end on 30 April 2005.
2. The class of inter-utility export authorized hereunder is the sale transfer of firm power and energy.
3. The power and energy to be exported hereunder shall be transmitted over any international power line for which a Certificate of Public Convenience and Necessity issued by the Board is in effect.
4. The quantity of power that may be exported under this licence shall not exceed 500 MW.
5. The quantity of energy that may be exported in any consecutive 12-month period within the term of this licence shall not exceed 3405 GW.h.
6. The quantity of energy that may be exported in any month within the term of this licence shall not exceed 370 GW.h.
7. The Licensee shall not export power or energy hereunder whenever and to whatever extent such power or energy is required to supply the Licensee's firm load requirements in Manitoba.
8. The price to be charged by the Licensee for exports made hereunder as sale transfers shall not be less than the price calculated in accordance with methods set forth in the Power Agreement dated 14 June 1984 between the Licensee and Northern States Power Company (hereinafter referred to as the "Power Agreement").
9. Exports of power and energy made hereunder shall be in accordance with the Power Agreement and the Licensee shall not, without the prior approval of the Board, amend, terminate, or enter into any agreement in substitution for or in addition to the Power Agreement.
10. The Licensee, within 15 days after the end of each month during the term of this licence, shall file with the Board a report in such form and detail as the Board may specify, setting forth for that month information pertaining to transactions under the licence.

Appendix 9

Decision on Preliminary Motions

7 November 1984

Yesterday the Board heard the representations of Mr. Rosenbloom on behalf of the Manitoba Keewatinowi Okimakanak in respect of two motions or preliminary objections to the application of Manitoba Hydro proceeding further at this time.

The objections may be summarized as follows:

First, the MKO argued that the Manitoba Energy Authority who, with Manitoba Hydro, was signatory to the agreement with Northern States Power, did not have the legal authority to enter into such an agreement. Therefore, the arguement follows, the contract which is before the Board is invalid and the proceedings should not continue; and second, in the alternative, MKO argued that if the Manitoba Energy Authority did have the power to become a signatory to the agreement in question, the MEA should be before the Board as an Applicant in the current proceedings.

The Northern Flood Committee Inc. and the Grand Rapids Special Forebay Committee Inc. supported the motion of Mr. Rosenbloom, while the Consumers Association of Canada (Manitoba) made submissions also basically in support of MKO's request.

Manitoba Hydro and Saskatchewan Power opposed the request.

The Board has given careful consideration to the submissions of all parties on MKO's preliminary objections. The arguments of all parties are clearly recorded in yesterday's transcript, and the Board does not believe it is necessary to repeat them here.

Section 81 and Section 2 of the NEB Act provide the statutory backdrop against which the Board has deliberated on this matter.

Section 81 of the Act, which was referred to yesterday by several parties, states in part that:

> "Except as otherwise authorized by or under the regulations, no person shall export... power... except under the authority of and in accordance with a licence issued under this Part"

Meaning, of course, Part VI of the NEB Act. "Export is defined in Section 2 of the Act to mean with reference to power "to send from Canada, by a line or wire or other conductor, power produced in Canada."

Manitoba Hydro is not new to the Board as an applicant for licences to export electricity under the NEB Act, and Manitoba Hydro has been the holder of such licences for some time. Under the *Manitoba Hydro Act*, Manitoba Hydro continues to be the principal producer and transmitter of electricity in the province, owning facilities for the production and transmission of power throughout Manitoba; it has built and operates the various interconnections over which it sells electricity to neighbouring provinces in Canada and states in the United States.

Nothing has been put before the Board to suggest that the foregoing situation in respect of Manitoba Hydro has fundamentally changed. What is new is that the MEA, which was set up under the Manitoba Energy Authority Act in 1980, has been added to the scene to act basically as a policy arm of the provincial government in the area of electricity resource development and marketing. The fact that the new agency, MEA, has been engaged with officials of Manitoba Hydro in negotiating the contract for the 12-year sale of 500 megawatts to Northern States Power is not in question.

What is in question is whether the MEA has now assumed a role such that it now shares with Manitoba Hydro the function of an actual exporter of electricity, specifically in the case before the Board, in regard to the proposed export to Northern States Power.

As I mentioned earlier, the Board has carefully considered all of the arguments made by the parties to this proceeding. Consideration has been given, *inter alia*, to whether there is any indication that in the case at hand, the MEA has assumed or will assume a position, either jointly or separately, as, effectively, the owner of the electricity proposed to be exported or of the facilities over which the export is proposed to be made.

On the information available to it, the Board has been unable to find that the MEA is, in any way, in such a position.

Given that the Board has been unable to make such a finding, the Board has further been unable to conclude that the MEA ought to be, either separately or jointly, the holder of any export licence which the Board might be prepared to issue under Part VI of the NEB Act in response to the application before it.

Having been unable to so conclude, the Board has decided that the MEA need not be a co-applicant in this proceeding. The Board finds that Manitoba Hydro is the appropriate applicant in the circumstances of this export application.

The Board recognizes the concern raised by MKO on the question of whether the MEA is a proper signatory to the sales agreement with NSP. However, this particular concern is not a matter which the Board finds it should attempt to settle in these proceedings, or indeed, *needs* to settle, having regard to all of the surrounding circumstances.

The Board adopts this position in view of the fact that the proposed export is covered by a legally binding agreement between the buyer, NSP, and the Applicant, Manitoba Hydro, the party which would produce the power and transmit it over its facilities to the international boundary for export. If the addition of the MEA as a signatory to the export agreement is proper, this adds the assurance of the commitment of an agency of the provincial government to the sale. If the legal capacity of the MEA to enter into such an agreement is open to question, this does not, in the Board's view, diminish the commitment of Manitoba Hydro to the export. Regardless of the legal position of the MEA as a signatory to the contract, any questions relating to the requirement for provincial approvals of this proposed sale or questions to clarify the obligations of parties under the contract can, of course, be pursued in this hearing. In reviewing the witnesses which the Applicant plans to call, the Board notes that witnesses on Panel 1 should be in a position to deal with questions of this nature. The Board is of the view that this will allow parties ample opportunity for a full and fair hearing on those issues relevant to these proceedings.

In light of the foregoing reasons, the motions of the MKO are denied.